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Per. 2333 d. 15/28(1).1

PUBLIC DOCUMENTS

PRINTED BY ORDER OF

THE SENATE OF THE UNITED STATES,

FIRST SESSION OF THE TWENTY-EIGHTH CONGRESS,

BEGUN AND HELD

AT THE CITY OF WASHINGTON,

DECEMBER 4, 1843,

IN THE SIXTY-EIGHTH YEAR OF THE INDEPENDENCE OF THE UNITED STATES.

EMBRACED IN SEVEN VOLUMES.

VOLUME I,

CONTAINING DOCUMENT No. 1.

WASHINGTON:
PRINTED BY GALES AND SEATON.
1844.

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MESSAGE

FROM

THE PRESIDENT OF THE UNITED STATES

TO

THE TWO HOUSES OF CONGRESS,

AT

THE COMMENCEMENT OF THE FIRST SESSION

OF

THE TWENTY-EIGHTH CONGRESS.

December 5, 1843.

Read, laid on the table, and ordered to be printed, with the accompanying documents; and that 3,500 additional copies of the message, and 1,500 additional copies of the message and documents, be furnished for the use of the Senate.

WASHINGTON:
PRINTED BY GALES AND SEATON.
1843.

MESSAGE.

To the Senate and House of Representatives of the United States:

If any people ever had cause to render up thanks to the Supreme Being for parental care and protection extended to them in all the trials and difficulties to which they have been from time to time exposed, we certainly are that people. From the first settlement of our forefathers on this continent—through the dangers attendant upon the occupation of a savage wilderness—through a long period of colonial dependence—through the war of the Revolution—in the wisdom which led to the adoption of the existing forms of republican Government—in the hazards incident to a war subsequently waged with one of the most powerful nations of the earth—in the increase of our population—in the spread of the arts and sciences, and in the strength and durability conferred on political institutions emanating from the people and sustained by their will—the superintendence of an overruling Providence has been plainly visible. As preparatory, therefore, to entering once more upon the high duties of legislation, it becomes us humbly to acknowledge our dependence upon Him as our guide and protector, and to implore a continuance of His parental watchfulness over our beloved country. We have new cause for the expression of our gratitude in the preservation of the health of our fellow-citizens, with some partial and local exceptions, during the past season—for the abundance with which the earth has yielded up its fruits to the labors of the husbandman—for the renewed activity which has been imparted to commerce—for the revival of trade in all its departments—for the increased rewards attendant on the exercise of the mechanic arts—for the continued growth of our population, and the rapidly reviving prosperity of the whole country. I shall be permitted to exchange congratulations with you, gentlemen of the two Houses of Congress, on these auspicious circumstances, and to assure you, in advance, of my ready disposition to concur with you in the adoption of all such measures as shall be calculated to increase the happiness of our constituents and to advance the glory of our common country.

Since the last adjournment of Congress, the Executive has relaxed no effort to render indestructible the relations of amity which so happily exist between the United States and other countries. The treaty lately concluded with Great Britain has tended greatly to increase the good understanding which a reciprocity of interest is calculated to encourage, and it is most ardently to be hoped that nothing may transpire to interrupt the relations of amity which it is so obviously the policy of both nations to cultivate.

A question of much importance still remains to be adjusted between them. The territorial limits of the two countries in relation to what is commonly known as the Oregon Territory, still remains in dispute. The United States would be at all times indisposed to aggrandize themselves at the expense of any other nation; but, while they would be restrained by principles of honor, which should govern the conduct of nations as well as that of individuals, from setting up a demand for territory which does not belong to them, they would as unwillingly consent to a surrender of their rights. After the most rigid, and, as far as practicable, unbiased examination of the subject, the United States have always contended that their rights appertain to the entire region of country lying on the Pacific, and embraced within the forty-second and fifty-fourth degree and forty minutes of north latitude. This claim being controverted by Great Britain, those who have preceded the present Executive, actuated, no doubt, by an earnest desire to adjust the matter upon terms mutually satisfactory to both countries, have caused to be submitted to the British Government propositions for settlement and final adjustment, which, however, have not proved heretofore acceptable to it. Our minister at London has, under instructions, again brought the subject to the consideration of that Government; and, while nothing will be done to compromit the rights or honor of the United States, every proper expedient will be resorted to in order to bring the negotiation, now in the progress of resumption, to a speedy and happy termination. In the mean time, it is proper to remark, that many of our citizens are either already established in the Territory, or are on their way thither for the purpose of forming permanent settlements, while others are preparing to follow—and, in view of these facts, I must repeat the recommendation contained in previous messages, for the establishment of military posts at such places, on the line of travel, as will furnish security and protection to our hardy adventurers against hostile tribes of Indians, inhabiting those extensive regions. Our laws should also follow them, so modified as the circumstances of the case may seem to require. Under the influence of our free system of Government, new republics are destined to spring up, at no distant day, on the shores of the Pacific, similar in policy and in feeling to those existing on this side of the Rocky Mountains, and giving a wider and more extensive spread to the principles of civil and religious liberty.

I am happy to inform you that the cases which have arisen, from time to time, of the detention of American vessels by British cruisers on the coast of Africa, under pretence of being engaged in the slave trade, have been placed in a fair train of adjustment. In the case of the William and Francis, full satisfaction will be allowed; in the cases of the Tigris and Seamew, the British Government admits that satisfaction is due; in the case of the Jones, the sum accruing from the sale of that vessel and cargo will be paid to the owners, while I cannot but flatter myself that full indemnification will be allowed for all damages sustained by the detention of the vessel; and in the case of the Douglass, Her Majesty's Government has expressed its determination to make indemnification. Strong hopes are therefore entertained that most, if not all, of these cases will be speedily adjusted. No new cases have arisen since the ratification of the treaty of Washington; and it is confidently anticipated that the slave trade, under the operation of the eighth article of that treaty, will be altogether suppressed.

The occasional interruption experienced by our fellow-citizens engaged in the fisheries on the neighboring coast of Nova Scotia has not failed to claim the attention of the Executive. Representations upon this subject have been made, but as yet no definitive answer to those representations has been received from the British Government.

Two other subjects of comparatively minor importance, but nevertheless of too much consequence to be neglected, remain still to be adjusted between the two countries. By the treaty between the United States and Great Britain, of July, 1815, it is provided that no higher duties shall be levied, in either country, on articles imported from the other, than on the same articles imported from any other place. In 1836, rough rice, by act of Parliament, was admitted from the coast of Africa into Great Britain on the payment of a duty of one penny a quarter, while the same article from all other countries, including the United States, was subjected to the payment of a duty of twenty shillings a quarter. Our minister at London has from time to time brought this subject to the attention of the British Government, but so far without success. He is instructed to renew his representations upon it.

Some years since a claim was preferred against the British Government, on the part of certain American merchants, for the return of export duties paid by them on shipments of woollen goods to the United States, after the duty on similar articles exported to other countries had been repealed, and consequently in contravention of the commercial convention between the two nations securing to us equality in such cases. The principle on which the claim rests has long since been virtually admitted by Great Britain, but obstacles to a settlement have from time to time been interposed, so that a large portion of the amount claimed has not yet been refunded. Our minister is now engaged in the prosecution of the claim, and I cannot but persuade myself that the British Government will no longer delay its adjustment.

I am happy to be able to say that nothing has occurred to disturb in any degree the relations of amity which exist between the United States and France, Austria and Russia, as well as with the other Powers of Europe, since the adjournment of Congress. Spain has been agitated with internal convulsions for many years, from the effects of which it is to be hoped she is destined speedily to recover—when, under a more liberal system of commercial policy on her part, our trade with her may again fill its old, and, so far as her continental possessions are concerned, its almost forsaken channels, thereby adding to the mutual prosperity of the two countries.

The Germanic Association of Customs and Commerce, which, since its establishment in 1833, has been steadily growing in power and importance, and consists at this time of more than twenty German States, and embraces a population of 27,000,000 of people, united for all the purposes of commercial intercourse with each other and with foreign States, offers to the latter the most valuable exchanges, on principles more liberal than are offered in the fiscal system of any other European Power. From its origin, the importance of the German Union has never been lost sight of by the United States. The industry, morality, and other valuable qualities of the German nation, have always been well known and appreciated. On this subject I invite the attention of Congress to the report of the Secretary of State, from which it will be seen that while our cotton is admitted free of duty, and the duty on rice has been much reduced, which has already led to a greatly increased consumption, a strong disposition has been recently evinced by that great body to reduce, upon certain conditions, their present duty upon tobacco. This being the first intimation of a concession on this interesting subject ever made by any European Power, I cannot but regard it as well calculated to remove the only impediment which has so far existed to the most liberal commercial intercourse between us and them. In this view, our minister at Berlin, who has heretofore industriously pursued the subject, has been instructed to enter upon the negotiation of a commercial treaty, which, while it will open new advantages to the agricultural interests of the United States, and a more free and expanded field for commercial operations, will affect injuriously no existing interest of the Union. Should the negotiation be crowned with success, its results will be communicated to both Houses of Congress.

I communicate herewith certain despatches received from our minister at Mexico, and also a correspondence which has recently occurred between the envoy from that Republic and the Secretary of State. It must be regarded as not a little extraordinary that the Government of Mexico, in anticipation of a public discussion, which it has been pleased to infer from, newspaper publications, as likely to take place in Congress, relating to the annexation of Texas to the United States, should have so far anticipated the result of such discussion as to have announced its determination to visit any such anticipated decision by a formal declaration of war against the United States. If designed to prevent Congress from introducing that question, as a fit subject for its calm deliberation and final judgment, the Executive has no reason to doubt that it will entirely fail of its object. The Representatives of a brave and patriotic people will suffer no apprehension of future consequences to embarrass them in the course of their proposed deliberations. Nor will the Executive department of the Government fail, for any such cause, to discharge its whole duty to the country.

The war which has existed for so long a time between Mexico and Texas has, since the battle of San Jacinto, consisted for the most part of predatory incursions, which, while they have been attended with much of suffering to individuals, and have kept the borders of the two countries in a state of constant alarm, have failed to approach to any definitive result. Mexico has fitted out no formidable armament by land or by sea for the subjugation of Texas. Eight years have now elapsed since Texas declared her independence of Mexico, and during that time she has been recognised as a sovereign Power by several of the principal civilized States. Mexico, nevertheless, perseveres in her plans of reconquest, and refuses to recognise her independence. The predatory incursions to which I have alluded, have been attended, in one instance, with the breaking up of the courts of justice, by the seizing upon the persons of the judges, jury, and officers of the court, and dragging them along with unarmed, and therefore non-combatant citizens, into a cruel and oppressive bondage, thus leaving crime to go unpunished, and immorality to pass unreproved. A border warfare is evermore to be deprecated, and over such a war as has existed for so many years between these two States humanity has had great cause to lament. Nor is such a condition of things to be deplored only because of the individual suffering attendant upon it. The effects are far more extensive. The Creator of the universe has given man the earth for his resting place, and its fruits for his subsistence. Whatever, therefore, shall make the first or any part of it a scene of desolation, affects injuriously his heritage, and may be regarded as a general calamity. Wars may sometimes be necessary; but all nations have a common interest in bringing them speedily to a close. The United States have an immediate interest in seeing an end put to the state of hostilities existing between Mexico and Texas. They are our neighbors, of the same continent, with whom we are not only desirous of cultivating the relations of amity, but of the most extended commercial intercourse, and to practise all the rights of a neighborhood hospitality. Our own interests are deeply involved in the matter, since, however neutral may be our course of policy, we cannot hope to escape the effects of a spirit of jealousy on the part of both of the Powers. Nor can this Government be indifferent to the fact that a warfare, such as is waged between those two nations, is calculated to weaken both Powers, and finally to render them, and especially the weaker of the two, the subjects of interference on the part of stronger and more-powerful nations, which, intent only on advancing their own peculiar views, may sooner or later attempt to bring about a compliance with terms, as the condition of their interposition, alike derogatory to the nation granting them, and detrimental to the interests of the United States. We could not be expected quietly to permit any such interference to our disadvantage. Considering that Texas is separated from the United States by a mere geographical line, that her territory, in the opinion of many, down to a late period, formed a portion of the territory of the United States, that it is homogeneous in its population and pursuits with the adjoining States, makes contributions to the commerce of the world in the same articles with them, and that most of her inhabitants have been citizens of the United States, speak the same language, and live under similar political institutions with ourselves, this Government is bound, by every consideration of interest as well as of sympathy, to see that she shall be left free to act, especially in regard to her domestic affairs, unawed by force, and unrestrained by the policy or views of other countries. In full view of all these considerations, the Executive has not hesitated to express to the Government of Mexico how deeply it deprecated a continuance of the war, and how anxiously it desired to witness its termination. I cannot but think that it becomes the United States, as the oldest of the American republics, to hold a language to Mexico upon this subject of an unambiguous character. It is time that this war had ceased. There must be a limit to all wars; and if the parent State, after an eight years' struggle, has failed to reduce to submission a portion of its subjects standing out in revolt against it, and who have not only proclaimed themselves to be independent, but have been recognised as such by other Powers, she ought not to expect that other nations will quietly look on, to their obvious injury, upon a protraction of hostilities. These United States threw off their colonial dependence, and established independent Governments; and Great Britain, after having wasted her energies in the attempt to subdue them for a less period than Mexico has attempted to subjugate Texas, had the wisdom and justice to acknowledge their independence, thereby recognising the obligation which rested on her as one of the family of nations. An example thus set by one of the proudest as well as most powerful nations of the earth, it could in no way disparage Mexico to imitate. While, therefore, the Executive would deplore any collision with Mexico, or any disturbance of the friendly relations which exist between the two countries, it cannot permit that Government to control its policy, whatever it may be, towards Texas; but will treat her as by the recognition of her independence the United States have long since declared they would do, as entirely independent of Mexico. The high obligations of public duty may enforce from the constituted authorities of the United States a policy which the course persevered in by Mexico will have mainly contributed to produce; and the Executive, in such a contingency, will with confidence throw itself upon the patriotism of the people to sustain the Government in its course of action.

Measures of an unusual character have recently been adopted by the Mexican Government, calculated in no small degree to affect the trade of other nations with Mexico, and to operate injuriously to the United States. All foreigners, by a decree of the 23d day of September, and after six months from the day of its promulgation, are forbidden to carry on the business of selling by retail any goods within the confines of Mexico. Against this decree our minister has not failed to remonstrate.

The trade heretofore carried on by our citizens with Santa Fe, in which much capital was already invested, and which was becoming of daily increasing importance, has suddenly been arrested by a decree of virtual prohibition on the part of the Mexican Government. Whatever may be the right of Mexico to prohibit any particular course of trade to the citizens or subjects of foreign Powers, this late procedure, to say the least of it, wears a harsh and unfriendly aspect.

The instalments on the claims recently settled by the convention with Mexico have been punctually paid as they have fallen due, and our minister is engaged in urging the establishment of a new commission, in pursuance of the convention for the settlement of unadjusted claims.

With the other American States our relations of amity and good will have remained uninterrupted. Our minister near the Republic of New Grenada has succeeded in effecting an adjustment of the claim upon that Government for the schooner "By Chance," which had been pending for many years. The claim for the brig "Morris," which had its origin during the existence of the Republic of Colombia, and indemnification for which, since the dissolution of that Republic, has devolved on its several members, will be urged with renewed zeal.

I have much pleasure in saying that the Government of Brazil has adjusted the claim upon that Government in the case of the schooner "John S. Bryan," and that sanguine hopes are entertained that the same spirit of justice will influence its councils in arriving at an early decision upon the remaining claims; thereby removing all cause of dissension between two Powers whose interests are to some extent interwoven with each other.

Our minister at Chili has succeeded in inducing a recognition by that Government of the adjustment effected by his predecessor of the first claims in the case of the "Macedonian." The first instalment has been received by the claimants in the United States.

Notice of the exchange of ratifications of the treaty with Peru, which will take place at Lima, has not yet reached this country, but is shortly expected to be received, when the claims upon that Republic will doubtless be liquidated and paid.

In consequence of a misunderstanding between this Government and that of Buenos Ayres, occurring several years ago, this Government has remained unrepresented at that Court, while a minister from it has been constantly resident here. The causes of irritation have, in a great measure, passed away; and it is in contemplation, in view of important interests which have grown up in that country, at some early period during the present session of Congress, with the concurrence of the Senate, to restore diplomatic relations between the two countries.

Under the provisions of an act of Congress of the last session, a minister was despatched from the United States to China, in August of the present year, who, from the latest accounts we have from him, was at Suez, in Egypt, on the 25th of September last, on his route to China.

In regard to the Indian tribes residing within our jurisdictional limits, the greatest vigilance of the Government has been exerted to preserve them at peace among themselves, and to inspire them with feelings of confidence in the justice of this Government, and to cultivate friendship with the border inhabitants. This has happily succeeded, to a great extent; but it is a subject of regret that they suffer themselves, in some instances, to be imposed upon by artful and designing men—and this, notwithstanding all the efforts of the Government to prevent it.

The receipts into the Treasury for the calendar year 1843, exclusive of loans, were little more than eighteen millions of dollars; and the expenditures, exclusive of payments on the public debt, will have been about twenty-three millions of dollars. By the act of 1842, a new arrangement of the fiscal year was made, so that it should commence on the 1st day of July in each year. The accounts and estimates for the current fiscal year will show that the loans and Treasury notes made and issued before the close of the last Congress, to meet the anticipated deficiency, have not been entirely adequate. Although, on the 1st of October last, there was a balance in the Treasury, in consequence of the provision thus made, of three millions nine hundred and fourteen thousand and eighty-two dollars and seventy-seven cents, yet the appropriations already made by Congress will absorb that balance, and leave a probable deficiency of two millions of dollars at the close of the present fiscal year. There are outstanding Treasury notes to about the amount of four millions six hundred thousand dollars; and, should they be returned upon the Treasury during the fiscal year, they will require provision for their redemption. I do not, however, regard this as probable, since they have obviously entered into the currency of the country, and will continue to form a portion of it, if the system now adopted be continued. The loan of 1841, amounting to five millions six hundred and seventy-two thousand nine hundred and seventy-six dollars and eighty-eight cents, falls due on the 1st of January, 1845, and must be provided for or postponed by a new loan. And, unless the resources of revenue should be materially increased by you, there will be a probable deficiency for the service of the fiscal year ending June 30, 1845, of upwards of four millions of dollars.

The delusion incident to an enormously excessive paper circulation, which gave a fictitious value to every thing, and stimulated adventure and speculation to an extravagant extent, has been happily succeeded by the substitution of the precious metals and paper promptly redeemable in specie, and thus false values have disappeared, and a sounder condition of things has been introduced. This transition, although intimately connected with the prosperity of the country, has nevertheless been attended with much embarrassment to the Government, in its financial concerns. So long as the foreign importers could receive payment for their cargoes in a currency of greatly less value than that in Europe, but fully available here in the purchase of our agricultural productions, their profits being immeasurably augmented by the operation, the shipments were large and the revenues of the Government became superabundant. But the change in the character of the circulation from a nominal and apparently real value, in the first stages of its existence, to an obviously depreciated value in its second, so that it no longer answered the purposes of exchange or barter, and its ultimate substitution by a sound metallic and paper circulation combined, has been attended by diminished importations, and a consequent falling off in the revenue. This has induced Congress, from 1837, to resort to the expedient of issuing Treasury notes, and finally of funding them, in order to supply deficiencies. I cannot, however, withhold the remark that it is in no way compatible with the dignity of the Government that a public debt should be created in time of peace to meet the current expenses of the Government, or that temporary expedients should be resorted to an hour longer than it is possible to avoid them. The Executive can do no more than apply the means which Congress places in its hands for the support of Government; and, happily for the good of the country and for the preservation of its liberties, it possesses no power to levy exactions on the people, or to force from them contributions to the public revenue in any form. It can only recommend such measures as may, in its opinion, be called for by the wants of the public service, to Congress, with whom alone rests the power to "lay and collect taxes, duties, imposts, and excises." This duty has upon several occasions heretofore been performed. The present condition of things gives a flattering promise that trade and commerce are rapidly reviving, and, fortunately for the country, the sources of revenue have only to be opened, in order to prove abundant.

While we can anticipate no considerable increase in the proceeds of the sales of the public lands, for reasons perfectly obvious to all, for several years to come, yet the public lands cannot otherwise than be regarded as the foundation of the public credit. With so large a body of the most fertile lands in the world under the control and at the disposal of the Government, no one can reasonably doubt the entire ability of the Government to meet its engagements under every emergency. In seasons of trial and difficulty, similar to those through which we are passing, the capitalist makes his investments in the Government stocks with the most assured confidence of ultimate reimbursement; and whatever may be said in a period of great financial prosperity, such as existed for some years after 1833, I should regard it as suicidal in a season of financial embarrassment, either to alienate the lands themselves, or the proceeds arising from their sales. The first and paramount duty of those to whom may be intrusted the administration of public affairs, is to guard the public credit. In re-establishing the credit of this central Government, the readiest and most obvious mode is taken to restore the credit of the States. The extremities can only be made sound by producing a healthy action in the central Government, and the history of the present day fully establishes the fact, that an increase in the value of the stocks of this Government will, in a great majority of instances, be attended by an increase in the value of the stocks of the States. It should therefore be a matter of general congratulation, that, amidst all the embarrassments arising from surrounding circumstances, the credit of the Government should have been so fully restored, that it has been enabled to affect a loan of seven millions of dollars, to redeem that amount of Treasury notes, on terms more favorable than any that have been offered for many years. And the six per cent. stock which was created in 1842, has advanced in the hands of the holders to nearly twenty per cent. above its par value. The confidence of the people in the integrity of their Government has thus been signally manifested. These opinions relative to the public lands do not in any manner conflict with the observance of the most liberal policy towards those of our fellow-citizens who press forward into the wilderness, and are the pioneers in the work of its reclamation. In securing to all such their rights of pre-emption, the Government performs but an act of retributive justice for sufferings encountered and hardships endured, and finds ample remuneration in the comforts which its policy ensures and the happiness which it imparts.

Should a revision of the tariff, with a view to revenue, become necessary in the estimation of Congress, I doubt not you will approach the subject with a just and enlightened regard to the interests of the whole Union. The principles and views which I have heretofore had occasion to submit remain unchanged. It can, however, never be too often repeated, that the prominent interest of every important pursuit of life requires for success permanency and stability in legislation. These can only be attained by adopting as the basis of action moderation in all things, which is as indispensably necessary to secure the harmonious action of the political as of the animal system. In our political organization, no one section of the country should desire to have its supposed interests advanced at the sacrifice of all others; but union, being the great interest, equally precious to all, should be fostered and sustained by mutual concessions and the cultivation of that spirit of compromise from which the Constitution itself proceeded.

You will be informed, by the report from the Treasury Department, of the measures taken under the act of the last session, authorizing the reissue of Treasury notes in lieu of those then outstanding. The system adopted in pursuance of existing laws seems well calculated to save the country a large amount of interest, while it affords conveniences and obviates dangers and expense in the transmission of funds to disbursing agents. I refer you also to that report for the means proposed by the Secretary to increase the revenue, and particularly to that portion of it which relates to the subject of the warehousing system, which I earnestly urged upon Congress at its last session, and as to the importance of which my opinion has undergone no change.

In view of the disordered condition of the currency at the time, and the high rates of exchange between different parts of the country, I felt it to be incumbent on me to present to the consideration of your predecessors a proposition conflicting in no degree with the Constitution or with the rights of the States, and having the sanction, not in detail, but in principle, of some of the eminent men who had preceded me in the Executive office. That proposition contemplated the issuing of Treasury notes of denominations not less than five nor more than one hundred dollars, to be employed in payment of the obligations of the Government in lieu of gold and silver, at the option of the public creditor, and to an amount not exceeding $15,000,000. It was proposed to make them receivable every where, and to establish at various points depositories of gold and silver, to be held in trust for the redemption of such notes, so as to ensure their convertibility into specie. No doubt was entertained that such notes would have maintained a par value with gold and silver, thus furnishing a paper currency of equal value over the Union, thereby meeting the just expectations of the people, and fulfilling the duties of a parental Government. Whether the depositories should be permitted to sell or purchase bills under very limited restrictions, together with all its other details, was submitted to the wisdom of Congress, and was regarded as of secondary importance. I thought then, and think now, that such an arrangement would have been attended with the happiest results. The whole matter of the currency would have been placed where by the Constitution it was designed to be placed—under the immediate supervision and control of Congress. The action of the Government would have been independent of all corporations, and the same eye which rests unceasingly on the specie currency, and guards it against adulteration , would also have rested on the paper currency, to control and regulate its issues and protect it against depreciation. The same reasons which would forbid Congress from parting with the power over the coinage, would seem to operate with nearly equal force in regard to any substitution for the precious metals in the form of a circulating medium. Paper, when substituted for specie, constitutes a standard of value by which the operations of society are regulated; and whatsoever causes its depreciation affects society to an extent nearly, if not quite, equal to the adulteration of the coin. Nor can I withhold the remark, that its advantages, contrasted with a Bank of the United States, apart from the fact that a bank was esteemed as obnoxious to the public sentiment, as well on the score of expediency as of constitutionality, appeared to me to be striking and obvious. The relief which a bank would afford by an issue of $15,000,000 of its notes, judging from the experience of the late United States Bank, would not have occurred in less than fifteen years; whereas, under the proposed arrangement, the relief arising from the issue of $15,000,000 of Treasury notes would have been consummated in one year; thus furnishing in one-fifteenth part of the time in which a bank could have accomplished it, a paper medium of exchange equal in amount to the real wants of the country, at par value with gold and silver. The saving to the Government would have been equal to all the interest which it has had to pay on Treasury notes of previous as well as subsequent issues, thereby relieving the Government, and at the same time affording relief to the people. Under all the responsibilities attached to the station which I occupy, and in redemption of a pledge given to the last Congress at the close of its first session, I submitted the suggestion to its consideration at two consecutive sessions. The recommendation, however, met with no favor at its hands. While I am free to admit, that the necessities of the times have since become greatly ameliorated, and that there is good reason to hope that the country is safely and rapidly emerging from the difficulties and embarrassments which every where surrounded it in 1841, yet I cannot but think that its restoration to a sound and healthy condition would be greatly expedited by a resort to the expedient in a modified form.

The operations of the Treasury now rest on the act of 1789 and the resolution of 1816, and those laws have been so administered as to produce as great a quantum of good to the country as their provisions are capable of yielding. If there had been any distinct expression of opinion going to show that public sentiment is averse to the plan either as heretofore recommended to Congress, or in a modified form, while my own opinion in regard to it would remain unchanged, I should be very far from again presenting it to your consideration. The Government has originated with the States and the people, for their own benefit and advantage ; and it would be subversive of the foundation principles of the political edifice which they have reared, to persevere in a measure which in their mature judgments they had either repudiated or condemned. The will of our constituents, clearly expressed, should be regarded as the light to guide our footsteps; the true difference between a monarchical or aristocratical Government and a Republic being, that in the first the will of the few prevails over the will of the many, while in the last the will of the many should be alone consulted.

The report of the Secretary of War will bring you acquainted with the condition of that important branch of the public service. The army may be regarded, in consequence of the small number of the rank and file in each company and regiment, as little more than a nucleus around which to rally the military force of the country in case of war; and yet its services, in preserving the peace of the frontiers, are of a most important nature. In all cases of emergency, the reliance of the country is properly placed in the *militia* of the several States, and it may well deserve the consideration of Congress, whether a new and more perfect organization might not be introduced, looking mainly to the volunteer companies of the Union for the present, and of easy application to the great body of the militia in time of war.

The expenditures of the War Department have been considerably reduced within the last two years; contingencies, however, may arise, which would call for the filling up of the regiments with a full complement of men, and make it very desirable to remount the corps of dragoons, which by an act of the last Congress, was directed to be dissolved.

I refer you to the accompanying report of the Secretary, for information in relation to the navy of the United States. While every effort has been and will continue to be made to retrench all superfluities and lop off all excrescences which from time to time may have grown up, yet it has not been regarded as wise or prudent to recommend any material change in the annual appropriations. The interests which are involved are of too important a character to lead to the recommendation of any other than a liberal policy. Adequate appropriations ought to be made to enable the Executive to fit out all the ships that are now in a course of building, or that require repairs, for active service in the shortest possible time, should any emergency arise which may require it. An efficient navy, while it is the cheapest means of public defence, enlists in its support the feelings of pride and confidence which brilliant deeds and heroic valor have heretofore served to strengthen and confirm.

I refer you particularly to that part of the Secretary's report which has reference to recent experiments in the application of steam and in the construction of war steamers, made under the superintendence of distinguished officers of the navy. In addition to other manifest improvements in the construction of the steam engine and application of the motive power, which has rendered them more appropriate to the uses of ships of war, one of those officers has brought into use a power which makes the steam ship most formidable either for attack or defence. I cannot too strongly recommend this subject to your consideration, and do not hesitate to express my entire conviction of its great importance.

I call your particular attention also to that portion of the Secretary's report which has reference to the act of the late session of Congress which prohibited the transfer of any balance of appropriation from other heads of appropriation to that for building, equipment, and repair. The repeal of that prohibition will enable the Department to give renewed employment to a large class of workmen who have been necessarily discharged, in consequence of the want of means to pay them—a circumstance attended, especially at this season of the year, with much privation and suffering.

It gives me great pain to announce to you the loss of the steamship the "Missouri," by fire, in the bay of Gibraltar, where she had stopped to renew her supplies of coal, on her voyage to Alexandria, with Mr. Cushing, the American minister to China, on board. There is ground for high commendation of the officers and men, for the coolness and intrepidity and perfect submission to discipline evinced under the most trying circumstances. Surrounded by a raging fire, which the utmost exertions could not subdue, and which threatened momentarily the explosions of her well-supplied magazines, the officers exhibited no signs of fear, and the men obeyed every order with alacrity. Nor was she abandoned until the last gleam of hope of saving her had expired. It is well worthy of your consideration, whether the losses sustained by the officers and crew in this unfortunate affair should not be reimbursed to them.

I cannot take leave of this painful subject without adverting to the aid rendered upon the occasion by the British authorities at Gibraltar, and the commander, officers, and crew of the British ship of the line the "Malabar," which was lying at the time in the bay. Every thing that generosity or humanity could dictate was promptly performed. It is by such acts of good will by one to another of the family of nations, that fraternal feelings are nourished and the blessings of permanent peace secured.

The report of the Postmaster General will bring you acquainted with the operations of that Department during the past year, and will suggest to you such modifications of the existing laws as in your opinion the exigencies of the public service may require. The change which the country has undergone of late years, in the mode of travel and transportation, has afforded so many facilities for the transmission of mail matter out of the regular mail, as to require the greatest vigilance and circumspection, in order to enable the officer at the head of the Department to restrain the expenditures within the income. There is also too much reason to fear that the franking privilege has run into great abuse. The Department, nevertheless, has been conducted with the greatest vigor, and has attained, at the least possible expense, all the useful objects for which it was established.

In regard to all the Departments, I am quite happy in the belief that nothing has been left undone which was called for by a true spirit of economy, or by a system of accountability rigidly enforced. This is in some degree apparent from the fact, that the Government has sustained no loss by the default of any of its agents. In the complex, but at the same time beautiful, machinery of our system of Government, it is not a matter of surprise that some remote agency may have failed for an instant to fulfil its desired office; but I feel confident in the assertion, that nothing has occurred to interrupt the harmonious action of the Government itself, and that, while the laws have been executed with efficiency and vigor, the rights neither of States nor individuals have been trampled on or disregarded.

In the mean time, the country has been steadily advancing in all that contributes to national greatness. The tide of population continues unbrokenly to flow into the new States and Territories, where a refuge is fund not only for our native-born fellow-citizens, but for emigrants from all parts of the civilized world, who come among us to partake of the blessings of our free institutions, and to aid by their labor to swell the current of our wealth and power.

It is due to every consideration of public policy that the lakes and rivers of the West should receive all such attention at the hands of Congress as the Constitution will enable it to bestow. Works in favorable and proper situations on the lakes would be found to be as indispensably necessary in case of war, to carry on safe and successful naval operations, as fortifications on the Atlantic seaboard. The appropriation made by the last Congress, for the improvement of the navigation of the Mississippi river, has been diligently and efficiently applied.

I cannot close this communication, gentlemen, without recommending to your most favorable consideration the interests of this District. Appointed by the Constitution its exclusive legislators, and forming in this particular the only anomaly in our system of Government, of the legislative body being elected by others than those for whose advantage they are to legislate, you will feel a superadded obligation to look well into their condition, and to leave no cause for complaint or regret. The seat of Government of our associated Republics cannot but be regarded as worthy of your parental care.

In connexion with its other interests, as well as those of the whole country, I recommend that at your present session you adopt such measures, in order to carry into effect the Smithsonian bequest, as in your judgment will be the best calculated to consummate the liberal intent of the testator.

When, under a dispensation of Divine Providence, I succeeded to the Presidential office, the state of public affairs was embarrassing and critical. To add to the irritation consequent upon a long standing controversy with one of the most powerful nations of modern times, involving not only questions of boundary, which, under the most favorable circumstances, are always embarrassing, but at the same time important and high principles of maritime law, border controversies between the citizens and subjects of the two countries had engendered a state of feeling and of conduct which threatened the most calamitous consequences. The hazards incident to this state of things were greatly heightened by the arrest and imprisonment of a subject of Great Britain, who, acting, as it was alleged, as a part of a military force, had aided in the commission of an act violative of the territorial jurisdiction of the United States, and involving the murder of a citizen of the State of New York. A large amount of claims against the Government of Mexico remained unadjusted, and a war of several years' continuance with the savage tribes of Florida still prevailed, attended with the desolation of a large portion of that beautiful Territory, and with the sacrifice of many valuable lives. To increase the embarrassments of the Government, individual and State credit had been nearly stricken down, and confidence in the General Government was so much impaired that loans of a small amount could only be negotiated at a considerable sacrifice. As a necessary consequence of the blight which had fallen on commerce and mechanical industry, the ships of the one were thrown out of employment, and the operations of the other had been greatly diminished. Owing to the condition of the currency, exchanges between different parts of the country had become ruinously high, and trade had to depend on a depreciated paper currency in conducting its transactions. I shall be permitted to congratulate the country that, under an overruling Providence, peace was preserved without a sacrifice of the national honor, the war in Florida was brought to a speedy termination; a large portion of the claims on Mexico have been fully adjudicated and are in a course of payment, while justice has been rendered to us in other matters by other nations; confidence between man and man is in a great measure restored, and the credit of this Government fully and perfectly re-established. Commerce is becoming more and more extended in its operations, and manufacturing and mechanical industry once more reap the rewards of skill and labor honestly applied. The operations of trade rest on a sound currency, and the rates of exchange are reduced to their lowest amount. In this condition of things, I have felt it to be my duty to bring to your favorable consideration matters of great interest in their present and ultimate results; and the only desire which I feel in connexion with the future is, and will continue to be, to leave the country prosperous, and its institutions unimpaired.

JOHN TYLER.

WASHINGTON, *December* 5, 1843.

DOCUMENTS

ACCOMPANYING THE PRESIDENT'S MESSAGE AT THE COMMENCEMENT OF THE FIRST SESSION OF THE TWENTY-EIGHTH CONGRESS.

Department of State,
Washington, November 24, 1843.

Sir: The Secretary of State respectfully invites your attention to the following views of the important subject of our relations with the Germanic Association or Customs Union, and of certain other matters which concern the commerce and navigation of the United States.

On the 24th of May, 1841, a communication was made to you by Mr. Webster, then Secretary of State, on the subject of the German Customs Union. This communication was laid before Congress, and printed under their orders. Since that time considerable additions have been made to the industry, population, and resources of that association.

The Zoll Verein or Customs Union at present consists of the following States:

States.	Population.
Kingdom of Prussia - - - - - -	14,271,530
Do. Bavaria - - - - - -	4,315,469
Do. Wurtemburg - - - - - -	1,649,839
Do. Saxony - - - - - -	1,652,114
Grand duchy of Baden - - - - - -	1,277,403
Electorate of Hesse - - - - - -	704,700
Grand duchy of Hesse, (with Hamburg) - - -	807,671
Duchy of Nassau - - - - - -	386,221
Thuringian Union - - - - - -	908,478
Free city of Frankfort on the Maine - - -	60,000
Duchy of Brunswick - - - - - -	250,000
Grand duchy of Luxemburg - - - -	400,000
Principality of Lippe Detmold - - - -	106,000
Total - - - - - -	26,799,000

The accession to the Union of the kingdom of Hanover, with nearly 2,000,000 of inhabitants, is in contemplation. This event would doubtless decide the smaller States of the north to join the Union; and in that case the whole of Germany, with the exception of the Austrian dominions, would be united, and would contain a population as is shown in the following table:

Table of population.

States.	Population.	Total.
Present population, as given in preceding table -	–	26,799,000
Hanover - - - - -	2,000,000	
Grand duchy of Oldenburg - - -	270,000	
The duchies of Holstein and Luxemburg, (belonging to the King of Denmark) - - -	481,000	
The duchy of Mecklenburg Schwerin - -	490,000	
The duchy of Mecklenburg Sterlitz . - -	91,000	
The Hanseatic cities of Lubeck, Hamburg, and Bremen - - - - -	260,000	
		3,392,000
All united in German Union - -	–	30,191,000

The interests of commerce will probably prove themselves as powerful in this as in other cases. No slight cause could have effected so difficult a work as the union of all Germany for one great and general object. In the prosecution of this scheme, Germany, notwithstanding the number and diversity of its States, acquires political unity, establishes an identity of national feeling, and secures for itself that rank amongst nations to which its extent, its resources, and its character entitle it.

There is a continually increasing demand in all the States of the Zoll Verein for most of the important articles of the produce of the United States. For example, in 1834 the Union imported 148,322 zoll centuers (each centuer equal to 108 pounds) of our tobacco, whilst in 1842 the importation of the same article amounted to 248,749 zoll centuers. The demand for our cotton and rice within the same period has increased in a similar ratio.

In return for these large exports, we receive a comparatively small amount of German manufactures, and the articles which we do receive are, for the most part, such as are not produced in the United States, *e. g.*, looking-glass plates, silks, toys, &c. The difference is paid us in cash.

Emigration from Germany to the United States presents a subject of great importance to us. We receive from the States associated in the German Union most valuable emigrants, consisting chiefly of farmers of excellent characters and industrious habits, who bring to their adopted country sufficient gold and silver to enable them to purchase and settle lands. The following official statement, made to the Chamber of Deputies of the kingdom of Bavaria, which does not contain one-seventh part of the inhabitants of the Union, will show the state of emigration in that country. From 1835 to 1839 the total emigration from Bavaria alone was—

Males - - - - - - - -	12,806
Females - - - - - - - -	11,701
	24,507
Viz: To America - - - - - - -	16,937
To France - - - - - - -	335
To Prussia - - - - - - -	13

To Greece - - - - - - - -	119
To Algiers - - - - - - - -	62
To places unknown, who got off without passports, and mostly went to the United States - - -	5,047
	24,507

The amount of money which these emigrants bore with them, as far as it is known to the Bavarian Government, is nearly seven millions of guilders—equal to about $2,800,000; but, in consequence of the heavy tax which is levied, not only in Bavaria but throughout a great part of Germany, upon money and other personal property taken out of the country by emigrants, it is probable that few of the persons enumerated made a declaration to the Government of more than one-half of their property. We may reasonably suppose, therefore, that those persons must have taken with them nearly twelve millions of guilders—equal to about $4,800,000. The number and value of the people who come to us from all Germany may thus be well appreciated, not only in their personal character, but in the addition they make to our actual wealth.

In order to remove the impediment to emigration presented in the heavy tax imposed on the property of the emigrants, I have, by your direction, instructed the minister of the United States at Berlin, Mr. Wheaton, who has been furnished with full powers for that purpose, to conclude special conventions for the abolition of the *droit d'aubaine* and *droit de detraction* between the United States and the following German States, who have severally expressed their readiness to enter into such arrangement, viz:

His Majesty the King of Bavaria.
His Majesty the King of Saxony.
His Majesty the King of Wurtemburg.
His Royal Highness the Elector of Hesse.
His Royal Highness the Grand Duke of Hesse.
His Royal Highness the Grand Duke of Baden.

Powers were also, at the same time, given to Mr. Wheaton to negotiate treaties of commerce and navigation with the grand duchies of Mecklenburg Schwerin and Oldenburg, two States not yet included in the Customs Union.

In view of these and other advantages which the contemplation of this subject held out, the minister of the United States at Berlin had been instructed to use every exertion in his power to place our relations with the German Customs Union on the best and most friendly footing; and the result is, that the basis of a conventional commercial arrangement has just been agreed upon (and submitted for the consideration and action of this Government) between His Majesty the King of Prussia, in behalf of Prussia, and all the States associated in the Customs Union, and the minister at Berlin, on the part of the United States; which, if sanctioned by Congress, would effect the long-cherished object of procuring the reduction of the present duty on our tobacco, secure the continued admission of our cotton free of all duties, and prevent the imposition of any higher duty on rice than that which is at present imposed—that article, as is already known, having already, at our request, been reduced to its present low rate by the Customs Union.

For these vast advantages, the conditional arrangement proposes that the

United States should give to the Customs Union proper equivalents, by reducing the heavy duties of the present tariff upon silks, looking-glass plates, wines, toys, linens, and such other articles as are not of the growth or manufacture of the United States.

Mr. Wheaton's late despatch will fully explain the whole course of his proceedings in reference to this interesting subject, and I doubt not will be satisfactory to Congress, should that body choose to call for them. In the mean time, I lay before you the correspondence between Mr. Wheaton and the Baron Bulow, (A,) which gives the outline of the proposed arrangement.

The reduction on tobacco proprosed on the part of the German Customs Union brings to our view, in a strong light, the unfortunate state of the trade with England, France, and Austria, in that great staple of our country. In England we have to complain of an enormous duty of three shillings a pound, or about 800 per cent. on its value at the place of exportation; at the same time it is permitted to sell the article freely in that country.

In France, however, although every minister of the United States, from the year 1786 to the present time, has earnestly pressed the subject upon that Government, no change has been effected. The Government of France still continues the monopoly or regie, which stops up all the avenues to that trade, whilst the United States admit all the products of French industry.

In Austria the same plan of monopoly or regie destroys the prospect of any productive trade in tobacco; and our minister at that Court holds out no inducement to hope for any change for the better.

It may be proper to remark that the proposed treaty will not affect the provisions of existing treaties with other foreign Powers. The stipulation is found in many of them, that, if the United States should grant more favorable terms to any other nation, those terms should be considered as extending to the nations parties to these treaties.

But this stipulation is always understood as conditional; that is, that the advantages of the new treaty shall be given only on the same terms on which they are given to the party of that treaty.

If they be given without equivalent, they must also be given to those nations without equivalent; if they be given in consideration of equivalents, no nation can claim them, under the general stipulation above mentioned, without offering a like equivalent.

The duties imposed on the importation of a particular commodity may therefore with propriety be reduced, as to articles the produce or manufacture of one country, which may, in consideration of such reduction, reduce its duties on our staple productions, without giving to any other nation, with which we may have such a treaty stipulation, a right to require the same reductions as to its productions or manufactures, unless such nations will come under the same conditions. The treaty of 1832 with France is a precedent in point.

Denmark has, by sufferance, continued to impose, up to this day, a most singular tax upon all goods which pass in or out of the sound, on board of every ship that enters or leaves the Baltic by this highway of nature.

Denmark cannot demand this toll upon any principle of natural or public law, nor upon any other ground than ancient usage, which finds no justification in the existing state of things. She renders no service for this exaction, and has not even the claim of power to enforce it.

A great and general dissatisfaction is felt, by all nations interested in the Baltic trade, at this unnecessary and humiliating exaction. I respectfully suggest that the time has arrived when the United States may properly take some decisive step to relieve our Baltic trade from this oppression.

For more full information upon this subject, I refer to the report of Mr. Webster, hereinbefore alluded to. No essential change has taken place since the date of that report, and our vessels continue to lower their topsails at the castle of Cronberg, and to pay tribute to Denmark.

The condition of our navigation and shipping interest demands, at this time, particular attention from the Government. The great and constantly increasing amount of foreign shipping in our ports shows the necessity of prompt legislation for the protection and enlargement of our commercial marine. There is reason to apprehend that, if the best-advised measures be not promptly taken, American commerce will soon be engrossed by the ships and seamen of Europe. There can be no doubt that the *cause* of this great evil is to be found in the stipulations of our commercial treaties, which place the shipping of foreign countries on an equality with that of the United States, in the indirect as well as the direct trade.

This necessarily operates to the advantage of those nations who can build and navigate their vessels at the least cost.

It is well known that most of the nations with which we have concluded such treaties, and especially those of the north of Europe, have a decided advantage over us in both these particulars. Nearly all the materials of ship-building are much more costly in the United States than in Europe. The wages we pay to our seamen are nearly double, and the general scale of living on shipboard is much better, and consequently much more expensive. The consequence of all this is, that our shipowners, before they can find employment for their vessels, are obliged to wait in their own ports until Swedish, Danish, and Hanseatic shipping has taken off as much freight as it can carry; and yet we persuade ourselves that our treaties with all these Powers have placed our commerce upon a footing of perfect reciprocity!

The treaties at present existing with Denmark, Sweden, the Hanseatic Republic, Prussia, Austria, and Russia, have already extended beyond their original limitation, and are subject to be discontinued at one year's notice.

The remaining treaties in which the reciprocity principle is adopted on the broadest scale, may be made the subject of consideration as the term of their duration approaches. The remedy is consequently in our own hands, and we have only to retrace our steps, and make known the determination of this Government to regulate its foreign trade, in future, upon such principles of reciprocity as shall not extend beyond the *direct* importation trade in the produce and manufactures of the contracting parties.

By the accompanying table, (B,) showing a comparative account of the domestic and foreign tonnage employed in the foreign trade of the United States for the last fifteen years, it will be seen that the average proportion of American shipping to foreign shipping was as follows:

Table of shipping.

Periods.	Proportion per cent.	
	American.	Foreign.
1828 to 1832 - - - - - -	81.7	18.3
1832 to 1837 - - - - - -	66.2	33.8
1838 to 1842 - - - - - -	69.1	30.9

The first period comprises the time when the treaties allowing indirect trade, contracted with the Hanse Towns, Sweden, and other Powers, in 1827 and succeeding years, first began to operate; and, although during the latter years the proportion of foreign vessels rapidly increased, the average of the whole was but eighteen per cent.

The second period commenced at about the time when a new impulse was added to the already increasing foreign navigation by the "colonial arrangement" with Great Britain in 1831 and 1832. During these five years, the proportion of foreign tonnage nearly doubled, while the *amount* thereof increased from two to six millions.

During the last five years, a period marked by extraordinary commercial fluctuations, the acquired proportion of foreign tonnage has been preserved with remarkable uniformity. This latter fact is an evidence that, however the commercial interests of the United States may have been depressed by these revolutions and fluctuations, the navigation interests of foreign Powers have not been seriously affected in their intercourse with us.

The able report of the Committee of Commerce of the House of Representatives (No. 835, May, 1842) embraces all the facts and statistics relating to our navigation and shipping interests; and I refer to it with pleasure for full information. All which is respectfully submitted.

A. P. UPSHUR.

The PRESIDENT OF THE UNITED STATES.

A.

[TRANSLATION.]

BERLIN, *October* 9, 1843.

MONSIEUR LE BARON: Various circumstances have hitherto prevented my answering the official note addressed to me, under date of the 25th September, 1842, by the Royal Ministry of Foreign Affairs of Wurtemburg, by which I was requested to communicate to the Government of His Prussian Majesty the propositions which the Government of the United States of America intended to make in respect to the advantages which the said Government might be disposed to extend to the Germanic Association of Commerce and Customs, in return for a reduction of the duties imposed on the importation of tobacco from the United States of America.

I am now prepared to make to you a precise overture on this subject, by proposing to lay down the basis of an arrangement to be hereafter concluded between the United States of America and the Germanic States belonging to the Association of Commerce and Customs, subject to the approbation of my Government, which will furnish me with the necessary instructions for this purpose, after having maturely examined the different propositions made on both sides.

I propose, then, to commence a negotiation for such an arrangement, having for its principal basis an exchange of equivalents between the two countries, by means of mutual reductions to be made in their respective tariffs, so as to give a greater extension to the commerce between them, without too much disturbing the protection at present accorded to the national industry of each country.

On the supposition that the duties at present imposed by the Germanic Association of Commerce and Customs upon the importation of *rice* are not augmented, and that the article of *cotton* remains free, as at present, the American Government will have nothing to ask, on its part, except a reduction of the duties levied by the Germanic Association on *tobacco* imported from the United States of America.

The American Government will then be disposed to grant a reduction of the duties imposed in the United States of America upon certain articles of the growth, produce, and manufacture of the German States belonging to the Association of Commerce and Customs, such as linens, and other manufactures of flax and hemp; silks, and mixed goods of which silk is the material of chief value; thread and cotton laces, or of gold and silver; hosiery; looking-glass plates; toys; and such other articles as may be designated by common consent: provided, that the Germanic Association of Commerce and Customs shall make such reduction, as shall be acceptable to the American Government, of the duties imposed on tobacco imported from the United States of America.

Please to receive, Monsieur le Baron, the assurances of my most distinguished consideration.

HENRY WHEATON.

His Excellency Baron de Bulow
Minister of Foreign Affairs of His Majesty the King of Prussia

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[TRANSLATION.]

Berlin, *October* 10, 1843.

Sir: I have seen with pleasure, by the letter you have addressed to me under date of the 9th of this month, that the Government of the United States of America desires to revive the commerce with Prussia and the other States of the Germanic Customs Association.

The Association has not imposed any new duties on the productions of America. On the contrary, the duty on the importation of rice was considerably diminished several years since; but, on the other hand, all the articles which the Association has hitherto imported into the United States have been so heavily dutied in the new tariff, that their importation has been in a great degree rendered impossible for the commerce of the States of the Association.

We believe, therefore, that we have a right to complain that the Government of the United States have changed the *status quo*, such as it existed before the adoption of the latest tariff.

The duty imposed here upon the importation of tobacco, of which the United States complains, is still heavier in other countries, such as Great Britain, France, and Austria; and a comparison of the years 1834 and

1842 conclusively proves that the consumption of foreign tobacco in the States of the Germanic Association is far from being injuriously affected by it.

The amount imported in 1834 was 148,322 quintals. In 1842, it was 248,749 quintals.

Since the last year, the duties of importation have been augmented as to cigars and powdered tobacco; but this increase can but affect favorably the importation of leaf tobacco, in which alone the North American States are interested.

Any reduction in the duty of importation on tobacco would be a great loss for the States of the Association, without any certain advantage resulting therefrom to those of America; for it still remains to be ascertained whether the consumption of American tobacco would be increased in proportion to this reduction.

It does not enter, for the present, into the views of the Germanic Association to lay a duty upon cotton, or to augment the duty of importation on rice; but it would not be disposed to stipulate with the United States of America not to lay, in future, any new duty on these articles.

The reopening the market of the United States, by means of a reduction of the import duties, would still, however, unquestionably be of the greatest importance for the productions of the soil and industry of the Germanic Association. If, then, the Government of the United States should offer to us important advantages for our articles of exportation, such as are designated in your letter, and upon other similar articles, Prussia, and with her all the States of the Association, will hasten to take into consideration the measures proper to favor, still more than it is now favored, the importation of North American tobacco into the States of the Association.

I pray you, sir, to receive, on this occasion, the renewed assurance of my high consideration. BULOW.

Mr. WHEATON, &c.

B.

The following are comparative tables of the domestic and foreign tonnage employed in the foreign trade of the United States, each table comprising a period of five years:

From 1828 *to* 1832, *inclusive.*

Years.	Tonnage.		Total tonnage.	Proportion per cent.	
	United States.	Foreign.		U. States.	Foreign.
1828 - - - -	1,755,785	301,253	2,057,038	85	15
1829 - - - -	1,817,748	263,749	2,081,497	87.5	12.5
1830 - - - -	1,948,987	265,336	2,214,323	88	12
1831 - - - -	1,895,456	553,942	2,449,398	77	23
1832 - - - -	1,924,487	780,543	2,705,030	71	29
Total - - -	9,342,463	2,164,823	11,507,286	408.5	91.5
Average proportion -	-	-	-	81.7	18.3

From 1833 *to* 1837, *inclusive.*

Years.	Tonnage.		Total tonnage.	Proportion per cent.	
	United States.	Foreign.		U. States.	Foreign.
1833 - - - -	2,253,601	993,744	3,247,345	69	31
1834 - - - -	2,208,690	1,145,752	3,354,442	66	34
1835 - - - -	2,753,170	1,272,134	4,025,304	68	32
1836 - - - -	2,570,707	1,354,934	3,925,641	65.5	34.5
1837 - - - -	2,566,342	1,521,993	4,088,335	62.5	37.5
Total - - -	12,352,510	6,288,557	18,641,067	331	169
Average proportion -	-	-	-	66.2	33.8

From 1838 *to* 1842, *inclusive.*

Years.	Tonnage.		Total tonnage.	Proportion per cent.	
	United States.	Foreign.		U. States.	Foreign.
1838 - - - -	2,711,735	1,196,276	3,908,011	69	31
1839 - - - -	2,969,207	1,236,653	4,205,860	70.5	29.5
1840 - - - -	3,223,955	1,418,849	4,642,804	69.5	30.5
1841 - - - -	3,266,065	1,473,293	4,739,358	69.5	30.5
1842 - - - -	3,046,562	1,473,272	4,519,834	67	33
Total - - -	15,217,524	6,798,343	22,015,867	345.5	154.5
Average proportion -	-	-	-	69.1	30.9

CORRESPONDENCE WITH MEXICO.

Mr. de Bocanegra to Mr. Thompson.

[TRANSLATION.]

NATIONAL PALACE, MEXICO, *August* 23, 1843.

The undersigned, Secretary of State for Foreign Relations and Government, has received express orders from his Excellency the Provisional President, to address the Hon. Waddy Thompson, envoy extraordinary and minister plenipotentiary of the United States, and to give him clear and definitive explanations respecting an affair, the consequences of which are grave and serious for the two nations whose friendship and good understanding should be maintained, for their reciprocal interests, and for the welfare of the whole human race.

Unfortunately, the events which have been occurring for so many years past—as well the colonization of Texas by citizens of the United States as the insurrection excited, sustained, and carried through, by citizens of those same States—have appeared to afford grounds for doubting the sincerity and frankness of the conduct of that powerful Republic with regard to the Mexican nation, although they were bound together by treaties, such as are esteemed sacred in the intercourse and relations of civilized States. This assertion has found a place in the series of historical truths; and, under this view alone, it is recalled by the Mexican Government with the deepest regret, and because, in approaching the event which is anticipated, it is indispensable to refer to the most lamentable circumstances which have preceded it. The recognition of the independence of Texas by the Government of the United States, which served as an example, and even as a stimulus to similar recognitions by some Governments of Europe, was on the point of altering the existing good understanding and harmony; and it must be considered as a great sacrifice to the public peace, and to the friendship professed towards the United States, that the Government of the Mexican Republic should have contented itself with making a proper protest against the act, in order thus to preserve the rights of the nation, its dignity, and its honor. From the moment when his Excellency the Provisional President took the reins of the Government, he has conducted himself according to the laudable maxims, that Government should be as firm in the purpose to be just in their foreign relations, as in demanding justice whenever aggressions are committed against them, such as may place in jeopardy those rights which they are bound to preserve at all cost. The Hon. Waddy Thompson is the best witness to show that his Excellency the President has condemned the dark policy of national antipathies, and has done all in his power to render the conduct of Mexico towards the United States consistent, honorable, and cordial, in order that no well-grounded motive of complaint might ever exist, and that no breach might be made in the existing stipulations; and it is likewise notorious that it has been sometimes necessary to subject the nation to great sacrifices, in order to keep its engagements inviolable. It likewise appears that the Government of the United States, in reciprocity for this uniform system, is bound, for the glory of its own name, to remove all causes of injury to the welfare of the two nations which may present themselves.

The Mexican Government has collected sufficient evidence, published in abundance by the American press, that a proposition is to be submitted to the deliberations of the Congress of the United States at its ensuing session, to incorporate with them the so-called Republic of Texas; and although his Excellency the President hopes that an authority so circumspect will defeat a design so unjust, and an attack so decisive on the rights of the Mexican nation over that territory, he has ordered the undersigned to declare to the Hon. Waddy Thompson, with the view that he may submit it to his Government, that the Mexican Government will consider equivalent to a declaration of war against the Mexican Republic the passage of an act for the incorporation of Texas with the territory of the United States; the certainty of the fact being sufficient for the immediate proclamation of war, leaving to the civilized world to determine with regard to the justice of the cause of the Mexican nation, in a struggle which it has been so far from provoking.

The colonists of Texas, generously received by the Mexican nation entered into that country, and rose in insurrection, under various pretexts but with the declared intention to wrest that territory from its lawful possessor; and as to Mexico, they never lost their character of subjects, while those (all citizens of the United States) who afterwards went to support their rebellion are regarded only as adventurers. And if a party in Texas is now endeavoring to effect its incorporation with the United States, it is from the consciousness of their notorious incapability to form and constitute an independent nation, without their having changed their situation, nor acquired any rights to separate themselves from their mother country. His Excellency the Provisional President, resting on this deep conviction, is obliged to prevent an aggression, unprecedented in the annals of the world, from being consummated; and if it be indispensable for the Mexican nation to seek security for its rights at the expense of the disasters of war, it will call upon God, and rely on its own efforts for the defence of its just cause. The Government of the undersigned, nevertheless, flatters itself with the hope that the Government of the United States will ward off from its country and from ours the deplorable consequences of a rupture, by preserving the amicable relations which his Excellency the President so ardently desires to maintain, and will thus save the glorious Republic which the immortal Washington founded from stain and dishonor.

The undersigned hopes that his excellency the minister of the United States will communicate this solemn protest to his Government, and will accept the assurances of high consideration on the part of his most obedient servant,

J. M. DE BOCANEGRA.

Hon. Waddy Thompson, *Envoy, &c.*

Mr. Thompson to Mr. de Bocanegra.

Legation of the United States of America,
Mexico, August 24, 1843

The undersigned has received and read with astonishment the note of his excellency José Maria de Bocanegra, Minister of Foreign Relations and Government, of yesterday's date. At the very moment when a rumor of an invasion of the territory of Mexico by citizens of the United States, having no other authority than the public newspapers, is proven to be without foundation, and upon which rumor his excellency had addressed a very strong note to the undersigned, another is received of a similar character, based upon no better authority. The direct threat of war, which his excellency makes, precludes the undersigned from offering any explanation whatever upon the subject. With a proud man, or a proud nation, the language of menace is not only unavailing, but has an inevitable tendency to defeat its object. The Government of the undersigned has no passion for war, foreign or domestic. It seeks a different path of glory. Still less does that Government desire war with Mexico. But if any thing could excite such a feeling, it will be the constant repetition of these threats, alike incompatible, in the judgment of the undersigned, with the respect due to his own Government and to that of Mexico; and the undersigned requests that they may not be repeated. If intended for intimidation, they will have no effect; and if as a warning, they are not necessary: for his country is always in a condition to meet any emergency.

The undersigned begs leave to add, that "the glorious republic founded by the immortal Washington" has its character in its own keeping, and needs no admonitions from any quarter to prevent it from stain or dishonor.

The undersigned renews to his excellency José Maria de Bocanegra, Minister of Foreign Relations, &c., the assurance of his distinguished consideration.

WADDY THOMPSON.

His Excellency JOSE MARIA DE BOCANEGRA,
Minister of Foreign Relations and Government
of the Mexican Republic.

Mr. de Bocanegra to Mr. Thompson.

[TRANSLATION.]

NATIONAL PALACE,
Mexico, September, 1843.

The undersigned, Minister of Foreign Relations and Government, when addressing the Hon. Waddy Thompson on the 21st of July and the 8th of August last, with respect to the new invasion of the territory of Mexico, made known the evidence which had been obtained, estimating it according to its real value, as it determined the Supreme Government to take a step so conformable with its dignity and propriety, after having examined those circumstances thoroughly. The Hon. Mr. Thompson will be able to convince himself that the Government, in making that communication, founded it not upon vague rumors, but upon advices, authentic, public, and official, afforded by the Mexican authorities, who cannot be supposed to wish to alarm their Government by uncertain and groundless information. The Government relied on the faith which should be placed in those authorities, and considered that they, when addressing their Government on a subject so serious in all its relations and aspects, did so in the discharge of the functions, civil and military, which they exercise in their respective departments.

Governments depend upon the testimony afforded by their agents; and if they are deprived of this means for the support of their measures, what other can they have, in order to become acquainted with the circumstances which require their attention?

In the offices of the Department of State are documents which induced the belief in a new invasion, and the order of General Houston for its cessation destroys all doubt on the subject.

With regard to the incorporation of Texas in the United States, the principal object of this note, and on which the Hon. Mr. Thompson treats in his reply of the 24th of August last, the information is still more positive, as to an affair which neither is nor can be indifferent to the Supreme Government of Mexico, because it has calculated and foreseen the exaggerated pretensions of those who in the United States support the pretensions of the adventurers of Texas. The communications, public and private, from that country, its newspapers, and the rumors there current, and the invitation signed at Washington on the 5th of March of this year, are circumstances which cannot be treated as vague rumors. The fact that the General Congress of the United States has already been occupied with the subject of the annexation of Texas is not only not destitute of foundation, but most positive proofs of it have been obtained; and it is not, therefore, one of those anecdotes which editors are in the habit of introducing into their newspapers, in order to render them more pleasing; it is a thing certain—most certain, unless the publications of the enlightened John Quincy Adams, and the opposition made and now in preparation against this project, at the head of which that personage stands, be fables.

To insist on what is positively known, that the States of the South are promoting and agitating the aggression upon Texas, would be an offence to the enlightenment and judgment of Mr. Thompson.

The probabilities are, that the Congress at Washington will again take up this affair at its next session, and that the reason, justice, and circumspection of a body, which, from its nature, proceeds with the utmost caution (*madurez deliberation*) in affairs of less importance, will frustrate pretensions based solely on private interests. The undersigned hopes, with good reason, from the principles of justice which ought to preside over the deliberations of the Congress of the United States, that it will never listen to suggestions, nor to private interests, detrimental to the law of nations and international law; but as it may happen that ambition and delusion may prevail over public propriety, that personal views may triumph over sane and just ideas, and that the vigorous reasoning of Mr. John Quincy Adams and his co-laborers may be ineffectual, how can it be considered strange and out of the way that Mexico, under such a supposition, should announce that she will regard the annexation of Texas as an act of declaration of war? Mexico, therefore, does not threaten, and still less does she provoke and excite; what she says is that which cannot be denied to her: that she will regard the annexation of Texas to the United States as a hostile act, inasmuch as this act involves a violation of the law of nations, and particularly of international law, by its infraction of the first article of the treaty of April 5, 1831, published in Mexico in 1832, which says: "There shall be a firm, inviolable, and universal peace, and a true and sincere friendship, between the United Mexican States and the United States of America, in all the extent of their possessions and territories, and between their people and citizens, respectively, without distinction of persons or places."

Mexico has always taken care to fulfil her stipulations, because she knows what she owes to other nations; but she wishes, also, that what is due to herself should be observed and maintained; and if on these principles she has protested, and does protest, she does in this no more than fulfil an obligation which is peculiar to her sovereignty and independence, without proposing, ever so distantly, to intimidate or to warn, but to show what it is proper for her to do.

The undersigned herewith repeats to the Hon. Waddy Thompson the assurances of his most distinguished consideration.

J. M. DE BOCANEGRA.

Hon. Waddy Thompson,
Envoy Extraordinary and Minister Plenipotentiary
of the United States of America.

Mr. Thompson to Mr. de Bocanegra.

Legation of the United States of America,
Mexico, September 24, 1843.

The undersigned, envoy extraordinary and minister plenipotentiary of the United States of America, has seen in the "Diario del Gobierno," of the 23d instant, an order of the Most Excellent the President of the Republic of Mexico, prohibiting foreigners, after the expiration of six months, from engaging in the retail business of any kind.

The third article of the treaty of amity, commerce, and navigation, between the United States and the Republic of Mexico, is in the following words:

"The citizens of the two countries, respectively, shall have liberty, freely and securely, to come, with their vessels and cargoes, to all such places, ports, and rivers, of the United States of America, and of the United Mexican States, to which other foreigners are permitted to come, to enter into the same, and to remain and reside in any part of the said territories, respectively; also, to hire and occupy houses and warehouses for the purpose of their commerce, and to trade therein in all sorts of produce, manufactures, and merchandise; and, generally, the merchants and traders of each nation shall enjoy the most complete protection and security for their commerce."

Language more comprehensive and clear, in the judgment of the undersigned, could not have been employed.

It cannot now be alleged that the term "trade" was meant only to imply buying and selling by wholesale. Such is not the true meaning of the term; and if such had been the intention of the parties to the treaty, the term should have been so qualified and restricted.

But it is perfectly clear that such was not their intention. The terms "merchant" and "trader" are both used. If wholesale commerce was meant, the term "merchant" was all-sufficient; and why was the other term "trader" also used? But the term "trader" has in English a distinct and specific meaning, and that meaning, in its general acceptation, is not only not buying and selling by wholesale, but exactly the opposite.

The term "commerciar," (the Spanish word used,) according to the "Diccionario de la Academia," is defined thus: "Negociar *traficar*, comprando y vendiendo ó permutando géneros"—to trade or traffic, buying and selling or exchange of goods.

The meaning of the word "negociar," as given by the same authority, is "tratar," which is also defined, to trade or traffic.

It seems, therefore, that the privilege of trading and trafficking, by wholesale or retail, without any restriction, is secured, by the above article of the treaty, as clearly by the Spanish terms employed as by the English; and the undersigned therefore solemnly protests against the said order of the 23d instant, as a direct violation of the treaty between Mexico and the United States; and he further protests against the same on another ground.

American citizens have come to Mexico with large stocks of goods, under the supposed security above alluded to, and when no such regulations as those now published existed; and it will amount to a confiscation of their property, without even the allegation against them of any offence, to require them to sell, or rather to sacrifice, their goods on the short notice of six months.

If there were only one such case, the sacrifice might not be so ruinous; but when it is considered that so many foreigners are engaged in the retail trade, if the stocks of all of them are thus at once forced into the market, the sacrifice must be complete and ruinous.

The undersigned has the honor to renew to his excellency Señor de Bocanegra the assurance of his distinguished consideration.

W. THOMPSON.

His Excellency JOSE MARIA DE BOCANEGRA,
Minister of Foreign Relations and Government of the Mexican Republic.

[Translation of the decree of the Mexican Government, referred to in the note of Mr. Thompson to Mr. de Bocanegra of the 24th of September, 1843.]

PALACE OF THE NATIONAL GOVERNMENT,
At Tacubaya, September 23, 1843.

Antonio Lopez de Santa Anna, General of Division, Benemento of the country, Provisional President of the Mexican Republic, to its inhabitants:

Be it known, that, taking into consideration the repeated complaints of all the departments against the exercise of the retail trade, which has been illegally allowed to foreigners, and the reduced state of that business as carried on by natives of the country, who, from well-known circumstances, cannot compete with foreigners in the market, being obliged to revive and protect it by all the means dictated by justice and permitted by law; seeing that, among other nations the most enlightened, the said trade by foreigners is restricted in various ways; that Mexicans cannot enjoy it by reciprocity; that the existing laws of the Republic, which have not been repealed by others, restrict foreigners in the exercise of the said trade; that for those persons themselves it would be most advantageous to fix, by a declaration, their position in this country in that respect; reconciling all that it is possible to concede to them with the public interests; using the right inherent in the sovereignty of the nation, and the faculties conceded to me by it, I have determined to declare and decree as follows:

ARTICLE 1. Foreigners are prohibited from exercising the retail trade, either publicly or privately, in all parts of the Mexican territory.

ART. 2. Persons naturalized in the Republic, or who are married to Mexicans, or who reside with their families in Mexico, are excepted from the prohibitions of the preceding article.

ART. 3. The foreigners excepted by the 2d article, who may wish to continue in this business, must petition the Supreme Government, through the Department of Foreign Relations and Government, to be allowed to do so, within the exact term of six months, annexing to their petition the following documents, to wit: those who have obtained a letter of naturalization, an authentic copy thereof; and those who are not naturalized are to present—1st. Evidence of their being married, authenticated duly by some of the diplomatic or consular agents of Mexico abroad, or by the curate of the port of the republic in which the marriage took place. 2d. The certificate of the chief political authority of the place in which they are established, proving the fact of their residence there as married persons. 3d. The certificate of the legation of their respective country, declaring that the capital which they use is their own. The want of any one of the said documents of evidence will be sufficient to prevent the person applying from exercising any retail trade.

Art. 4. Foreigners who may hereafter enter the Republic may also carry on the said business, after having fulfilled what is required in the preceding article.

Art. 5. A register shall be kept, in the Department of Foreign Affairs and Government, of the individuals excepted by this decree, setting forth the circumstances under which such exception was made, their residence, and presentation of proofs, in order to prevent any question from arising thereafter.

Art. 7. Every foreigner not excepted, who, at the expiration of the term herein allowed, shall have sold any thing in retail, shall forfeit the goods, and shall pay a fine equal to its value ; every Mexican or foreigner guilty of fraud against this decree shall pay the same fine, or shall suffer the penalty of imprisonment for from two months to two years; and the goods, as well as the amount of the fine, after deducting the judicial expenses, shall be given to the informer and the seizor, in equal parts to each, or the whole to whoever shall combine both characters. As despatch is most necessary in this class of judgments, they will conform to the dispositions of the existing tariff of October 26, 1842.

Art. 8. Foreigners may keep shops for the sale of articles made by themselves in any port of the Republic, provided they have some Mexicans with them as apprentices or journeymen.

Therefore, let this decree be printed, published, circulated, and executed.

ANTONIO LOPEZ DE SANTA ANNA.

Ignacio Trigueros,
Minister of Finance.

Mr. Thompson to Mr. Upshur.—[extract.]

Legation of the United States,
Mexico, October 14, 1843.

Sir: I have the honor to send you, herewith, a note (No. 1) from the Minister of Foreign Affairs, upon the subject of the order prohibiting the retail trade to foreigners, and my reply, (No. 2.) This measure will cause a greater sacrifice of American interests and property than all the previous outrages of Mexico upon our citizens united. It is part of a policy upon which I have good reason to believe that the present Government has resolved to cut off all foreign commerce.

[No. 1.] *Mr. de Bocanegra to Mr. Thompson.*

[TRANSLATION.]

NATIONAL PALACE, MEXICO, *October* 9, 1843.

His excellency Mr. Waddy Thompson, envoy extraordinary and minister plenipotentiary of the United States of America, was pleased, under date of the 24th ultimo, to remonstrate against the decree issued on the 23d of the same month, restricting foreigners as to the exercise of the retail trade, which his excellency considers as an infringement of the treaty between Mexico and the United States, in its third article, the first part of which he copies.

The undersigned, Minister of Foreign Relations and Government, agrees with Mr. Thompson completely as to the clearness of the said article, provided it be taken in the whole; and he considers it sufficient to copy the second paragraph thereof, immediately following that which his excellency cites in support of his position.

The said paragraph says: "And they (the citizens of the two countries) shall not pay other nor higher duties, imposts, or fees, whatever, than those which the most favored nations are or may be obliged to pay, and shall enjoy all the rights, privileges, and exemptions, with respect to navigation and commerce, which the citizens of the most favored nations do or may enjoy, but subject always to the laws, usages, and statutes of the two countries, respectively."

After stipulations so express and definitive, no ground remains for the protest of the honorable minister plenipotentiary of the United States; and the undersigned would be offering an offence to his good judgment, his knowledge and prudence, if he should proceed to other definitions.

The decree of the 23d of September being (as it is) general, and not special, Mexico has respected her engagements by continuing towards citizens of the United States the treatment of the most favored nation, to which they are entitled; and, in issuing that law, in place of the Spanish laws, which were in force in the Republic, she has used a right inherent in her sovereignty, granting at the same time, as she conceives that she has, a reasonable period of delay, such as is practised in other cases, for its being carried into execution.

The undersigned, in replying to the said note from the honorable minister plenipotentiary of the United States, embraces the occasion to repeat to him the assurances of his high consideration.

JOSE M. DE BOCANEGRA.

His Excellency WADDY THOMPSON,
Envoy Extraordinary and Minister Plenipotentiary U. S. A.

[No. 2.] *Mr. Thompson to Mr. de Bocanegra.*

LEGATION OF THE UNITED STATES,
Mexico, October 10, 1843.

The undersigned, envoy extraordinary and minister plenipotentiary of the United States of America, has the honor to acknowledge the receipt of the note of his excellency Jose M. de Bocanegra, Minister of Foreign Relations and Government, of yesterday's date, upon the subject of the prohibition of the retail business to foreigners. Although it may subject the undersigned to the imputation of "a want of intelligence and correct judgment," he is constrained to say, that he cannot perceive the slightest bearing upon the subject of discussion of the latter portion of the 3d article of the treaty between Mexico and the United States, to which his excellency Mr. Bocanegra refers. Does his excellency mean to say that the treaty with the United States is in no particular different from any other of the treaties of Mexico? If so, it would have saved time and trouble, instead of drawing out that treaty so elaborately as has been done, to have accomplished the object in two lines, thus:

"The same rights and privileges are guarantied to the two nations, respectively, as are enjoyed by the most favored nations."

The undersigned does not so regard it. Various privileges are *specifically* enumerated and defined; and the clause quoted by your excellency was only intended by its general terms to include any others which had not been thus specifically stated, and not by any means as qualifying or limiting concessions thus distinctly made.

Where the language is as explicit as that used in the first portion of the 3d article of the treaty, there can be no occasion to go beyond it, and to inquire what guarantees and concessions are secured to other nations. If it were otherwise, and a case were to occur not thus clearly provided for, it might then be necessary to inquire whether the right disputed had been conceded to any other nation; and if so, then to claim the same under the paragraph securing equal privileges with the most favored nations.

Nor does the undersigned find any mitigation of the act, nor any alleviation of the sufferings of his countrymen from its effects, from the consideration that all other foreigners suffer equally; no more than if, in reply to a complaint that fifty of his countrymen had been, in violation of all law and justice, decapitated, he should be told that the same number of Englishmen and Frenchmen had suffered a like fate.

The undersigned would, in conclusion, most respectfully express the hope that, upon further reflection upon the subject, the order in question may be countermanded, and the many inconveniences which will certainly flow from it be thus avoided.

The undersigned renews to your excellency the assurances of his most distinguished consideration.

WADDY THOMPSON.

His Excellency JOSE M. DE BOCANEGRA,
Minister of Foreign Relations, &c.

[No. 51.] *Mr. Upshur to Mr. Thompson.*

DEPARTMENT OF STATE,
Washington, October 20, 1843.

SIR: Your despatches Nos. ——— are received. It is gratifying to perceive that the Mexican Government has manifested a disposition to render prompt justice in the matter of the forced loan, and of the demand made on Mr. Robinson on account of claims alleged to exist against Mr. Powers. No concession can be made on either of these points.

Your letter to Mr. de Bocanegra, in reply to that which he addressed to you on the 23d of August, is certainly in no respect too spirited or positive. The language of Mr. Bocanegra's letter, particularly in its concluding sentence, is highly offensive, and you would have been fully justified in requiring him to withdraw it. The warning which you have given him against the use of similar expressions in future will, it is hoped, have its effect. If, however, you should again be addressed in terms so assuming and so disparaging to the United States, you will demand that the letter be withdrawn, or that suitable apology for it be made. You will at the same time inform the Mexican Government that you can hold no intercourse with it, except on such terms of courtesy and respect as are due to the honor and dignity of the United States.

In regard to the threat, that Mexico will consider the annexation of Texas to the United States as equivalent to a declaration of war, you were certainly right to offer no explanation whatever. Should the subject, however, be again brought to your attention in a proper manner, you will say that you are not in possession of the views of your Government in relation to it. You may intimate, however, if the occasion should justify it, that, as the independence of Texas has been acknowledged, not only by the United States, but also by all the other principal Powers of the world, most of whom have established diplomatic relations with her, she is to be regarded as an independent and sovereign Power, competent to treat for herself; and as she has shaken off the authority of Mexico, and successfully resisted her power for eight years, the United States will not feel themselves under any obligation to respect her former relation with that country; that we should greatly regret any interruption of our friendly relations with Mexico, and do not design to do any thing of which she can justly complain; that if war should ensue, Mexico herself will be the aggressor, and will alone be responsible for all the evils which may attend it; and that in the mean time the United States will pursue the policy which their honor and their interest require, taking counsel only of their own sense of what is due to themselves and to other nations.

The order of the Mexican Government prohibiting the importation of certain articles of merchandise, and subjecting to forfeiture the same and other articles already imported, unless they shall be disposed of in one year, is, beyond all doubt, in violation of the spirit of our treaty with that country. It is, to say the least of it, a very extraordinary proceeding on the part of a Government which professes to feel a sincere desire to cultivate friendly relations and to hold a liberal intercourse with other countries. So far as the prohibition of future importation extends, I do not perceive that it violates the treaty. The third article of the order, which subjects to forfeiture, after a prescribed time, goods already on hand, "the importation of which was never authorized," probably does not involve any wrong or injustice. But the fourth article, which subjects to like forfeiture goods *lawfully* imported, unless they shall be sold or shipped within one year, is a manifest violation of the liberty of trade secured by the treaty. It subjects American merchants to liabilities which were never contemplated, and utterly destroys the trade which the treaty was intended to secure. It is a fraud upon the American merchant; the treaty authorized and invited him to fill his warehouse with imported goods, and as soon as he has done so they are subjected to forfeiture by an *ex post facto* decree, with the conditions of which it may and probably will be impossible for him to comply. The United States will by no means submit to such injustice, and so plain an infraction of treaty stipulations. It will be proper for you, therefore, to complain of the illiberal character of the whole order, and to protest in the strongest manner against the provisions of the fourth section of it. Any loss or injury which citizens of the United States may sustain from any proceeding under that section will be ground for reclamation against the Mexican Government.

I am very anxious to know what progress has been made towards some suitable arrangement for the further adjustment of American claims. I hope that you will be able to conclude a convention which will secure justice to our citizens. This has already been too long delayed, to the great injury of all of them.

The history of our past diplomatic intercourse with Mexico suggests the necessity of using towards that Government a tone of decision. Her functionaries have more than once ventured to assume towards the United States an attitude of superiority, not less offensive than surprising. This, I am sure, you will never suffer to pass without proper rebuke. In the transaction of business with that Government, it will be proper to present, as soon as possible, your ultimatum, and to insist on a direct and positive answer. Demanding nothing but what is strictly right, there can be no reason why our just demands should not receive prompt attention. While this Government is not disposed to press that of Mexico with unnecessary rigor, it perceives nothing in any pending question which may not be easily adjusted by frank and candid discussion, with a sincere desire to do justice. Unreasonable delays are to be met by an urgency on your part which shall show at once the disposition of the United States to render full and prompt justice to Mexico, and to insist on receiving like treatment from her.

I am, sir, with great respect, your obedient servant,

A. P. UPSHUR.

WADDY THOMPSON, Esq., *&c.*

[Translation of the decree of the Mexican Government, referred to in the instructions of Mr. Upshur to Mr. Thompson of the 20th October, 1843.]

Valentin Canaliso, General of Division, Governor and Commandant General of the Department of Mexico.

The following has been communicated to me by the Minister of Finance, under date of the 14th instant:

His Excellency the Provisional President has been pleased to issue the following

DECREE:

Antonio Lopez de Santa Anna, General of Division, *Benemento* of the country, and Provisional President of the Mexican Republic, to the inhabitants thereof: Be it known, That, desiring to protect the national industry by giving occupation and means of subsistence to the needy class, and to bring into effect the many elements with which the Republic abounds, using the faculties bestowed upon me by the seventh of the bases adopted in this city, and sanctioned by the nation, I have thought proper to decree, as follows:

Article 1. The importation of the following articles into the Republic is prohibited, under pain of confiscation:

Coaches, gigs, and every sort of foreign carriages; saddles and harness; hats, finished and in felt; furniture of all sorts; forte pianos; dolls and toys of all kinds; all articles of gold, silver, and plated or gilded copper, in the following list, viz: wire of all kinds; holy-water pots; table ornaments; jars, urns, pitchers, barbers' basins, sugar dishes; rods for images; waiters; gold chains; candlesticks; buttons, bracelets, armlets, broaches, and clasps; chains; coffee pots; bells; communion cups; candelabras; cartridge boxes, powder boxes or flasks; hat buckles; cigar cases; ribbons; church and *table* candlesticks; cups of all sorts; saucers; spoons, large and small; knives; custodias; thimbles; snuffers; diadems; relics; spit boxes; fruit baskets; fountains; gorgets; mountings for arms; saddles, harness, &c.; torch stands; buckles; sacred boxes; censers; soap dishes; jugs, large and small; coffee services; lamps; watch keys; chocolate stands; picture frames; medals, large and small; incense holders; wafer holders; basins of various sorts; shovels; small candlesticks; chalice covers; pitchers; small dishes; dishes; plates; oil vessels; fish hooks; offerings; bandeaus; ornamental keys; cane heads; reflectors; bouquet holders; articles for presents; relic holders; salt cellars; sand boxes; salvers; terrines; rings; smoking tongs; trenchers; vinagrettes; altar cloths; manufactures of iron and steel, as follows: rings; spurs; straps; sheep bells; bars for doors or windows; small knockers; large knockers; awls; pincers; staples; key rings; curtain rings; handsaws; hoops; anvils; adzes; shovels; scales; augers; boring bits; bits for horses; chafing ditches; brushes; buvins; iron chains and collars for dogs; kettles; bedsteads; baskets; padlocks; kitchen lamps; chest plates; pullies; cots; sauce pans; smoothing planes; chisels; traps; locks; chocolate pots; nails; iron compasses; scabbard plates; nail cutters; knives; strings for musical instruments; thimbles; screw drivers; lathes; mortise chisels; scrutoires; steels for tinder boxes; spurs; stirrups; stoves; pivots; moulds for pastry; curbs; brands; hooks; dentists' instruments; jack planes; cramp irons; hinges; axes; hatchets; buckles, and other iron articles for horse furniture; iron worked for balconies, railings, &c.; wire; amulets; scythes; Dutch ovens; files; locks for guns or pistols; felloes for wheels; spits; hammers; moulds; springs for doors and for coaches; pots; chain shot; fire shovels; small candlesticks; gridirons; bolts; hair rings; pestles; weights; spikes; pullies; sword hilts; harrows; rakes; window grating; steelyards; corkscrews; saws; gimlets; cups; curling tongs; chimney tongs; shoemakers' pincers; founders' tongs; trusses; screws; spinning wheels; trenchers; large hinges; all articles made of tin and zinc.

Article 2. The prohibition set forth in the preceding article shall begin to have effect four months from the date of the publication of this decree in the capital of the Republic, with regard to all articles entering the ports of the Mexican Gulf; and at the end of six months, for the ports of the South sea, the Gulf of California, and the seaports of Upper California.

Article 3. The articles now on hand, which could never have been legally introduced into the Republic, shall be disposed of or reshipped within six months; after which time, all those found in the shops or stores shall be confiscated, their amount being distributed to the informers and the seizors, according to the tariff of confiscations; besides which, the holders of those articles may be subjected to a fine of from ten to three hundred dollars, to be applied to the public treasury, in the terms set forth by the laws.

ARTICLE 4. The space of one year is allowed for the consumption or re-embarkation of the articles on hand, the importation of which is prohibited by this decree; and, at the end of that time, proceedings of the same nature, as detailed in the next foregoing article, will be adopted with regard to them.

ARTICLE 5. All agents or officers of the maritime custom-houses, through which it may be proved that any of the above-enumerated articles have been introduced, shall be dismissed from their employment.

Wherefore, I order that it be printed, published, circulated, and enforced.

ANTONIO LOPEZ DE SANTA ANNA.

IGNACIO TRIGUEROS, *Secretary of the Treasury.*

NATIONAL PALACE AT TACUBAYA, *August* 14, 1843.

General Almonte to Mr. Upshur.

[TRANSLATION.]

MEXICAN LEGATION,
Washington, November 3, 1843.

The undersigned, envoy extraordinary and minister plenipotentiary of the Mexican Republic, has the honor, by express order from his Government, to address the honorable A. P. Upshur, Secretary of State of the United States, for the purpose of making known to him, so that he may be pleased to communicate it to his Excellency the President, that the Mexican Government has well-grounded reasons to believe that, in the approaching session of the General Congress of the United States, the question as to the annexation of a part of its territory to that of the United States will be discussed; and that such a measure, if carried into effect, cannot be considered by Mexico in any other aspect than as a direct aggression.

From what has been said, the Secretary of State will have seen that reference is here made to the department of Texas, an integrant part of the Mexican Republic; and the undersigned would consider himself as questioning the understanding of the Secretary of State, if he should proceed to demonstrate the rights of his Government to the above-mentioned department. For the same reason, he will confine himself simply to reminding the Secretary of State of the existence of a treaty by which the United States of America acknowledged the sovereignty of Mexico over the said territory; and although subsequently Texas, in consequence of a revolution, excited, as every one knows, by citizens who emigrated from this country, proclaimed its independence, and this independence was unexpectedly acknowledged by the United States of America, the Government of the undersigned immediately protested against such recognition, and declared that it would not, in any way, affect the rights of Mexico.

Thus the undersigned, in consideration of the reasons above exposed, and relying on the good judgment and enlightened patriotism of the next General Congress of the Union, not less than on the integrity of the worthy Magistrate who now presides over the destinies of this Republic, trusts that, for the sake of justice and of the friendly relations of two adjoining nations, which have so long existed in peace, the design above indicated will not be carried into effect, but will rather be regarded with indignation by the legislative body. But if, contrary to the hopes and wishes entertained by the Government of the undersigned, for the preservation of the good understanding and harmony which should reign between the two neighboring and friendly Republics, the United States should, in defiance of good faith and of the principles of justice which they have constantly proclaimed, commit the unheard-of act of violence *(inaudito atentado*—the expression is much stronger than the translation) of appropriating to themselves an integrant part of the Mexican territory, the undersigned, in the name of his nation, and now for them, protests, in the most solemn manner, against such an aggression; and he moreover declares, by express order of his Government, that, on sanction being given by the Executive of the Union to the incorporation of Texas into the United States, he will consider his mission ended, seeing that, as the Secretary of State will have learned, the Mexican Government is resolved to declare war so soon as it receives information of such an act.

The undersigned flatters himself, nevertheless, with the idea that the circumstances which have occasioned this note will disappear completely, and that the Government of the honorable Secretary of State of the United States of America will employ, at the proper times, all the means in its power to frustrate the said plan, thus saving its own good name, and displaying prominently the principles which ought to characterize a Government, free, enlightened, and just in its political transactions.

The undersigned repeats to the Secretary, &c.

J. N. ALMONTE.

Hon. A. P. UPSHUR,
Secretary of State of the United States of America.

Mr. Upshur to General Almonte.

DEPARTMENT OF STATE,
Washington, November 6, 1843.

The undersigned, Secretary of State of the United States, has the honor to invite the attention of General Almonte, envoy extraordinary and minister plenipotentiary of the Mexican Republic, to a translation of an alleged decree of the Mexican Government, which is published in the National Intelligencer of this morning, closing certain frontier custom-houses of that Republic, and to inquire whether the decree referred to is authentic, and whether it has been officially or otherwise communicated to General Almonte.

The undersigned has also been informed that the Mexican Government has recently issued another decree or decrees, prohibiting foreigners from engaging in the retail trade in that Republic, and confining them to a residence within a certain distance of the coast. The undersigned will thank General Almonte for any information or explanations which it may be in his power to furnish relative to these proceedings.

The undersigned avails himself of this occasion to offer General Almonte renewed assurances of his high consideration.

A. P. UPSHUR.

Brigadier General Don J. N. ALMONTE, &c.

[From the National Intelligencer of November 6, 1843.]

MEXICO—MINISTRY OF FINANCE.

His Excellency the Provisional President of the Republic has rendered the following decree:

"ANTONIO LOPEZ DE SANTA ANNA.

"ARTICLE 1. Are closed without restriction to all exterior commerce the frontier custom-houses of Taos, in the department of New Mexico, at the Paso del Norte, as well as at the Presidio del Norte, in the department of Chihuahua.

"ARTICLE 2. This declaration shall have effect forty-five days after its publication in the capital. In consequence, &c.

"ANTONIO LOPEZ DE SANTA ANNA.

"IGNACIO TRIGUEROS, *Minister of Finance.*

"NATIONAL PALACE OF TACUBAYA, *August* 7, 1843."

General Almonte to Mr. Upshur.

TRANSLATION.

MEXICAN LEGATION,
Washington, November 7, 1843.

The undersigned, envoy extraordinary and minister plenipotentiary of the Mexican Republic, had the honor to receive the note addressed to him yesterday by the honorable Abel P. Upshur, Secretary of State of the United States of America, relative to certain decrees which the Government of Mexico has recently issued, closing against foreign commerce the frontier custom-houses of Taos, in New Mexico, and of Paso del Norte and Presidio del Norte, in the department of Chihuahua; and asking whether it were certain that another decree had been issued, prohibiting foreigners from engaging in retail trade, and giving them notice that they must reside at a certain distance from the coasts of the Republic.

The undersigned has the honor, in answer, to inform the honorable Mr. A. P. Upshur, Secretary of State, that, although his Government has not transmitted the said decrees to him directly, yet he has seen them published in the official newspaper of Mexico, and he has no doubt of their authenticity.

As to the notice which is said to have been given to foreigners, that they should reside only at a certain distance from the coast, the undersigned is entirely ignorant that his Government has issued any orders whatsoever on the subject, and he does not fear to assert that the statement to that effect is entirely without probability.

The undersigned, in order that the honorable Secretary of State may fully understand the matter, has the honor to enclose to him a copy of each of the decrees above mentioned, and to assure him that he will without delay communicate to him any other document on the subject which he may receive from his Government.

The undersigned avails himself of this occasion to repeat to the honorable Mr. A. P. Upshur, Secretary of State, the assurances of his distinguished consideration.

J. N. ALMONTE.

Hon. A. P. Upshur, *Secretary of State.*

Mr. Upshur to General Almonte.

Department of State,
Washington, November 8, 1843.

The undersigned, Secretary of State of the United States, has the honor to acknowledge the receipt of the letter which General Almonte, envoy extraordinary and minister plenipotentiary of the Mexican Republic, did him the honor to address to him on the 3d instant.

General Almonte informs the undersigned that he has it in express order from his Government to make known to the undersigned, so that it may be communicated to the President, that the Mexican Government has well-grounded reasons to believe that, in the approaching session of the General Congress of the United States, the question as to the annexation of a part of its territory to the United States will be discussed; and that such a measure, if carried into effect, cannot be considered by Mexico in any other aspect than as a direct aggression. General Almonte further informs the undersigned, by express order of his Government, that, on sanction being given by the Executive of the Union to the incorporation of Texas into the United States, he will consider his mission ended, seeing that the Mexican Government is resolved to declare war so soon as it receives information of such an act. General Almonte is pleased to conclude his communication with the expression of a hope that this Government will employ, at the proper time, all the means in its power to frustrate the said plan, thus saving its own good name, and displaying prominently the principles which ought to characterize a Government, free, enlightened, and just, in its political transactions.

As General Almonte has made no inquiry of the undersigned as to the facts upon which his letter is founded, it is presumed that the Mexican Government is entirely satisfied with the information it has already received, particularly as that information has been deemed sufficient to justify the imputation of designs, on the part of a branch of this Government, which are characterized as highly unworthy, and which General Almonte has thought fit to denounce in terms quite as strong as diplomatic courtesy will allow. The undersigned, therefore, does not feel that he is called on either to admit or to deny the design imputed to the Congress of the United States, by the Government of Mexico, even if he can be presumed to know any thing upon the subject.

As to the threat of war made in advance, in the name and by the express order of the Mexican Government, the undersigned reminds General Almonte that it is neither the first nor the second time that Mexico has given the same warning to the United States, under similar circumstances. The undersigned had hoped that the manner in which these threats have heretofore been received and treated had clearly shown to the Mexican Government the light in which they are regarded by that of the United States. The undersigned has now only to add, that as his Government has not, in time past, done any thing inconsistent with the *just* claims of Mexico, the President sees no reason to suppose that Congress will suffer its policy to be affected by the threats of that Government. The President has full reliance on the wisdom and justice of Congress, and cannot anticipate that any occasion will arise to forbid his hearty co-operation in whatever policy that body may choose to pursue, either towards Mexico or any other Power.

In conclusion, the undersigned reminds General Almonte that this Government is under no necessity to learn, from that of Mexico, what is due to its own honor or to the rights of other nations. It is therefore quite unnecessary that General Almonte, in his future communications to this department, should admonish this Government either to respect its duties or to take care of its reputation, in any contingency which the Mexican Government may choose to anticipate.

The undersigned avails himself of this occasion to offer General Almonte renewed assurances of his high consideration.

A. P. UPSHUR.

Brigadier General Don J. N. ALMONTE, &c.

General Almonte to Mr. Upshur.

[TRANSLATION.]

WASHINGTON, *November* 11, 1843.

The undersigned, envoy extraordinary and minister plenipotentiary of the Mexican Republic, had the honor to receive the answer which the Hon. Mr. A. P. Upshur, Secretary of State of the United States, was pleased to make to his note of the 3d instant, relating to a protest which the undersigned addressed to that gentleman against the annexation of Texas to the United States of America.

From the tenor of that answer, the undersigned has seen with regret that the Hon. Mr. Upshur, Secretary of State, has fallen into two grave errors, (*equivocaciones*—misunderstandings,) occasioned, possibly, by some error committed in the translation which has been made of his note.

The first of these misunderstandings consists in supposing that the Government of the undersigned imputes to one of the supreme powers of the American Union unworthy views or designs with regard to the territory of Texas. The Mexican Government has cast no such imputation—quite the contrary; it has manifested its reliance on the circumspection and good judgment of the American Congress. Indeed, how could it have anticipated (foreseen) the conduct of the legislative body, when that body has not yet been assembled? What the undersigned and his Government have said is, *that the Mexican Government has well-grounded reasons to believe that, in the approaching session of the General Congress of the United States, the question as to the annexation of a part of its territory (Texas) to the United States will be discussed,* (se tratara.) Here it is clearly seen that neither the undersigned nor his Government have said that Congress will take up (tratara) the subject of the annexation of Texas, but that the subject of the annexation of Texas will be discussed in its sessions, (en sus sesiones se tratara;) that is to say, that this question will, in some manner, be agitated in its body; that it will afford material for discussion, (discusion,) for which, as the Secretary of State well knows, it will be sufficient that a petition be presented, or that some member should make a proposition to the effect in Congress, for a discussion to take place, even though it were for no other object than to admit or reject such a proposition. This is what the undersigned and his Government have said; and, in order that the Secretary of State may see that what has been said by both is not without foundation, it will be sufficient for the undersigned, without need of reference to other circumstances in proof, to cite the exposition on the subject of the annexation of Texas, made on the 3d of March last by thirteen members, among whom is found the respectable name of the Hon. John Quincy Adams, ex-President of this Republic.

Since that time, articles have been constantly appearing in the newspapers of the South, and especially in the official journal of the Government, in favor of the annexation of Texas; respecting which, the latter paper has gone so far as to say, that *it* (the annexation) *is of such importance that the individual or individuals who may contribute the most to effect an object so advantageous for the Union, and so anxiously desired by the Texans, will receive the applause of the country, now and hereafter.* It is very possible that these expressions may have been written without the knowledge of the Secretary of State, and the undersigned desires to believe it so; but, in truth, presumptions indicate the contrary.

The Secretary of State, moreover, seems to consider it strange that the Government of the undersigned should not have hitherto made any inquiry of him as to the facts upon which his protest is founded; thus giving it to be understood that he is ignorant of any project being entertained (entre manos—in hand) for the annexation of Texas to the United States, or that it is in contemplation (se trate) to submit such a question to the deliberations of the ensuing Congress. The undersigned would highly value a formal declaration to that effect on the part of the Secretary of State, in order to be able to transmit it without delay to his Government, as it would show, in a most unequivocal manner, that if any one in the United States be engaged in machinations (maquire) against the integrity of the Mexican territory, the Executive of the Union is entirely ignorant of it. The undersigned can assure the Secretary of State that such a declaration would be highly important and satisfactory for his Government, and that it would contribute effectively to preserve unalterable the relations of friendship which actually exist between the two countries. In fine, the protest which the undersigned has made has been conditional; that is to say, it applies to the case in which the Government of the United States should, contrary to the expectations of the Mexican Government, unfortunately carry into execution the act against which the protest is directed.

The second misunderstanding consists in the supposition that the undersigned has meant to point out to the Secretary of State or his Government in what manner they (it) should fulfil their (its) duties, and take care of their (its) reputation. The undersigned has taken upon himself no such office. What he has set forth in his note is the hope which animates him, "that the circumstances which have occasioned it (the note) would disappear, and that the Government of the honorable Secretary of State would employ at the proper times all the means in its power to frustrate the project of the annexation, thus saving its own good name, and displaying prominently the principles which ought to characterize a Government free, enlightened, and just in its political transactions." Nothing more is here manifested than a desire, a hope, (or expectation.) Whence could the honorable Secretary of State, then, have drawn the inference that the undersigned meant to admonish his Government as to the course which it should pursue ? (el manejo que debe observar.) Does not the Secretary of State see that the undersigned has done no more than second the desires of the American people, who wish their country to be conducted in the path of honor, justice, and reason ?

The undersigned, therefore, does not know to what to attribute the not very decorous language *(lenguage poco decoroso)* which the honorable Secretary of State has employed in saying that the observations (advertencias—warnings) of the undersigned are unnecessary in the communications which he may in future address to the Department of State, and in declaring that the Government of the United States is under no necessity to learn from that of Mexico what is due to its own honor or to the rights of other nations.

The undersigned has also observed, with regret, that the honorable Secretary of State, in the conclusion of his above-mentioned note, declares that his Government has not, in time past, done any thing inconsistent with the just rights of Mexico. The undersigned is grieved to be obliged to think far otherwise ; and, although he might on this occasion demonstrate the injuries which his country has received from the United States, he will dispense with doing so, because his intention is not to revive old circumstances of difference, nor to irritate feelings, but to reconcile and tranquillize them as much as possible.

In conclusion, the undersigned considers it his duty (secrée en el caso) to repeat to the Secretary of State, in order that he may be pleased to communicate it to his Excellency the President, that neither he nor his Government have intended, and that it should not have been supposed that they would have intended, to cast imputation (agraviar) upon the legislative body, and much less to admonish the Executive as to its duties. His desires have tended solely to the maintenance of the peace and harmony which ought to subsist between two neighboring and friendly nations ; and though the undersigned has declared, by express order of his Government, that war will be the inevitable consequence of the annexation of Texas to the United States, he certainly has not done so with the object of intimidating the Government of the honorable Secretary of State, but with the view of showing how far Mexico would carry her resistance to an annexation of that nature. And, in truth, the honorable Secretary of State should not regard this as any other than a very natural feeling ; as it is most clear, that if Mexico or any other Power should attempt to appropriate to herself a portion of the territory of the United States, the latter would not consent to it without first appealing to arms, whatsoever might be the result to which the fortune of war might subject them.

The undersigned has the honor to renew to the Secretary of State the assurances of his very high and distinguished consideration.

J. N. ALMONTE.

Hon. A. P. Upshur,
Secretary of State.

Mr. Upshur to General Almonte.

Department of State,
Washington, December 1, 1843.

The undersigned, Secretary of State of the United States, has the honor to acknowledge the receipt of the letter, of the 11th November, addressed to him by General Almonte, minister plenipotentiary and envoy extraordinary of the Mexican Republic, in reply to the letter of the undersigned of the 8th day of the same month. The minister of Mexico informs the undersigned that he has seen with regret that the undersigned has fallen into two grave mistakes in regard to the meaning of the Mexican minister's letter of the 3d of November, which mistakes, he presumes, are the consequence of some error committed in the translation of that letter, made in this department. A suggestion of this sort, coming from the minister of a nation whose language is different from that of the United States, could not fail to put the undersigned upon careful inquiry as to the correctness of it. The undersigned regrets that this has afforded him no reason to suppose that the language of the Mexican minister's letter admits of any more correct translation into English than that which it has received. If the true meaning of that letter has not been given, it may be owing to the difficulty which always exists in giving in one language all the minute shades of meaning which may be found in the idiomatic expressions of another. Be that as it may, the undersigned does not hesitate to take the Mexican minister's interpretation of his own language, as given in his letter to which this is a reply; but he is, at the same time, compelled to declare that he does not see, even in this interpretation, in what respect he has misunderstood the Mexican minister.

The first mistake into which the Mexican minister asserts that the undersigned has fallen is in supposing that the Government of Mexico "imputes to one of the supreme powers of the American Union unworthy views or designs with regard to the territory of Texas;" and the Mexican minister now expressly declares that "the Mexican Government has cast no such imputation—quite the contrary; it has manifested its reliance on the circumspection and good judgment of the American Congress." If this be so, the undersigned is quite at a loss to know why the Mexican minister should have considered it necessary to denounce war, as the consequence of the anticipated action of the American Congress. If, as he now declares, (and as of course he must be understood,) he meant only to say that the subject of the annexation of Texas to this Union would be proposed and in some manner agitated or discussed in the American Congress, and if, as he also declares, he meant to express the "reliance of his Government on the circumspection and good judgment of Congress" to defeat any "unworthy views or designs with regard to the territory of Texas," it would seem that his interposition could not have been necessary, even in his own view of the case. He either did or did not anticipate a movement on the part of Congress more serious than a simple discussion of the measure in question. If he did, then the undersigned has not misunderstood him; if he did not, then the denunciation of war was wholly gratuitous and unnecessary, because it was made on a contingency which he himself did not mean to say was even probable.

Whether the Mexican minister did or did not, in his letter of the 3d of November, mean to impute to this Government, or some part of it, the design to annex Texas to the Union, the undersigned cannot understand him as meaning any thing else in his explanatory letter of the 11th. He avows his suspicion of such a design in his attempt to show that he was justified in entertaining that suspicion; and he does this in the very passage of his letter in which he endeavors to prove that the undersigned erred in attributing such a suspicion to him. Why else does he refer to the exposition made by Mr. Adams and other members of Congress on the 3d of March last, to the articles in public newspapers, and particularly to those which appeared in that which he styles the journal of the Government? He declares that these proofs are altogether sufficient for him, and that he has no need to refer to other circumstances which, in his opinion, authorize the same conclusion.

This conclusion is fortified, in the opinion of the Mexican minister, by the presumption, which he thinks the circumstances of the case justify, that the articles of which he complains as obnoxious, and which appeared in the "journal of the Government," were published with the knowledge of the undersigned. The Mexican minister may not be aware that in the United States there is *no* journal of the Government. If he had known this, he would not probably have thought it necessary to allude to the presumed agency or connivance of the American Secretary of State in those publications.

The undersigned adverts to this part of the Mexican minister's letter only to show that he has not misunderstood the Mexican minister in this particular. He does not complain that the Government of Mexico suspects that this Government entertains a design to annex Texas to the Union; but he thinks that it was due to this Government that inquiry should be made through the proper channels, and in a friendly and respectful spirit, whether this Government really entertained such designs or not. Without such previous inquiry, the denunciation of war, as the consequence of an attempt to carry them into execution, could not but be regarded as an unnecessary threat. These designs were characterized by the Mexican minister in terms of obloquy as strong as the language of his country afforded. In the opinion of his Government at least, they were highly discreditable to the United States; and yet, professing to be satisfied with the proofs already before him, and without asking for any explanation, the Mexican minister, upon a mere suspicion, threatened war, in the name of his country, as the only adequate mode of resenting so great an outrage upon her rights. This is an unusual course of proceeding, and one to which the just self-respect of this Government can by no means submit. Whether the suspicions of Mexico were well founded or not, it was due to this Government that she should not take it for granted that the United States meditated an encroachment upon her rights, real or supposed, great enough to justify so extreme a measure of retaliation as a declaration of war.

The undersigned regrets that he is equally unable to perceive, from the Mexican minister's explanations, that he has been misunderstood in the second particular specified by him. In his letter of the 3d November, he expresses the hope, which animates him, "that the circumstances which have occasioned it (the letter) would disappear, and that the Government of the honorable Secretary of State would employ, at the proper times, all the means in its power to frustrate the project of the annexation; thus saving its own good name, and displaying prominently the principles which ought to characterize a Government free, enlightened, and just, in its political transactions." Quoting these words, he now informs the undersigned that "nothing more is here manifested than a desire, a hope, (or expectation;") and he further says that, in expressing this hope, he has done no more than "second the desires of the American people, who wish their country to be conducted in the path of honor, justice, and reason." Does not the Mexican minister know that the mere expression of a hope may be very offensive? Does he not perceive that when Mexico expresses the hope that the United States will act in such a manner as to save their good name, in a given case, a doubt is implied whether they will do so or not? And when he tells the undersigned that the course which he points out is necessary to "save the good name" of the United States, how can he be otherwise understood than as pointing out to the Secretary of State, or his Government, in what manner they should fulfil their duties and take care of their reputation? It is not perceived that he improves his position, when he tells the undersigned that in all this he (the Mexican minister) does nothing more than "second the desires of the American people, who wish their country to be conducted in the path of honor, justice, and reason." Surely he must have known that the American people are themselves the conductors of their country, and that their Government is but the expression of their will.

In replying thus far to the Mexican minister's note of the 11th ultimo, the undersigned has had no other object than to vindicate his construction of the Mexican minister's letter of the 3d, and at the same time to intimate his expectation that he will not be addressed in language susceptible of a construction discourteous towards his country or Government. So far as the Mexican minister has disclaimed the construction which the undersigned felt himself compelled to place upon the last-mentioned note, the undersigned receives the disclaimer. He does not desire to subject the language of the Mexican minister to captious criticism; and he would fain indulge the hope that in the future correspondence between himself and the Mexican minister there may be no room for misconstruction or complaint on either side.

The Mexican minister informs the undersigned that he would be pleased to receive from him a formal disavowal of any purpose, on the part of the American Government, to annex Texas to the Union. The Mexican minister must be aware that it is not in the power of the undersigned to give any such disavowal, so far as the Congress of the United States is concerned; and he cannot fail to perceive that, considering the attitude which

Mexico has chosen to assume, such a disavowal on the part of the President cannot be reasonably expected, whatever his views and intentions may be. It is due, however, to the frankness, which it is the desire of the United States to display in all their dealings with other countries, that the undersigned should make to the Mexican minister the following explicit declaration:

Near eight years have elapsed since Texas declared her independence. During all that time Mexico has asserted her right of jurisdiction and dominion over that country, and has endeavored to enforce it by arms. Texas has successfully resisted all such attempts, and has thus afforded ample proof of her ability to maintain her independence. This proof has been so satisfactory to many of the most considerable nations of the world, that they have formally acknowledged the independence of Texas, and established diplomatic relations with her. Among these nations the United States are included; and indeed they set the example which other nations have followed. Under these circumstances, the United States regard Texas as in all respects an independent nation, fully competent to manage its own affairs, and possessing all the rights of other independent nations. The Government of the United States, therefore, will not consider it necessary to consult any other nation in its transactions with the Government of Texas. The Mexican minister expresses his regret at the declaration of the undersigned, that "his Government has not in time past done any thing inconsistent with the just rights of Mexico;" and he declares at the same time that he thinks far otherwise, and that he could, if his intentions were not rather to soothe than to irritate, demonstrate the injuries which his country has received from the United States. The undersigned assures the Mexican minister, that, while he is wholly unconscious of any reason which Mexico has for complaint against his Government, he will receive with pleasure any representation which the Mexican minister may think that he has cause to make; and, far from considering it matter for irritation or excitement, he will be prepared to examine it impartially, and to discuss it respectfully and calmly. And he further assures the Mexican minister that it is and ever has been the earnest desire of this Government to do full justice to Mexico in every respect whatever; of which it will give proof, as it has already given proof, whenever the Mexican minister may choose to make known the grievances of which his Government complains.

The undersigned avails himself of this occasion to offer the Mexican minister renewed assurances of his very distinguished consideration.

A. P. UPSHUR.

Brigadier General Don J. N. ALMONTE, &c.

REPORT

OF

THE SECRETARY OF WAR.

War Department, *November* 30, 1843.

Sir: I beg leave to submit the annual report of the Department of War. The accompanying documents (marked, respectively, from 1 to 10, inclusive) contain the detailed statements furnished by the Commanding Major General and the several bureaus of the Department of War of the business under their respective and immediate charge, and their views in relation to the same.

The regular army consists of 716 commissioned officers, 17 military storekeepers, and 7,590 enlisted men, (non-commissioned officers, artificers, musicians, and privates, of dragoons, artillery, infantry, and riflemen,) 40 sergeants, and 250 enlisted men of ordnance—making an aggregate of 8,613, organized as follows:

General and staff officers.—One major general, two brigadier generals, one adjutant general, six assistant adjutants general, two inspectors general, one quartermaster general, two deputy quartermasters general, four quartermasters and twenty-eight assistant quartermasters, one commissary general, one assistant commissary general, and six commissaries of subsistence.

Medical department.—One surgeon general, twenty surgeons, and fifty assistant surgeons.

Pay department.—One paymaster general and fifteen paymasters.

Corps of engineers.—One colonel, two lieutenant colonels, four majors, twelve captains, twelve first lieutenants, and fifteen second lieutenants.

Corps of topographical engineers.—One colonel, one lieutenant colonel, four majors, ten captains, ten first lieutenants, and twelve second lieutenants.

Ordnance corps.—One colonel, one lieutenant colonel, four majors, ten captains, six first lieutenants, and eleven second lieutenants.

One regiment of dragoons, containing ten companies, of fifty privates each; *four regiments of artillery*, each containing ten companies, of forty-two privates each; *eight regiments of infantry*, each containing ten companies of forty-two privates; *one regiment of riflemen*, of ten companies, of fifty privates each.

The present actual force of the army, according to the latest returns, is 7,844, being an excess over the legal establishment of 254 enlisted men. It is estimated that this excess will disappear by the end of the year.

The United States are divided into nine military departments, commanded each by a general officer or colonel.

The 1*st military department*, commanded by Brevet Brigadier General Arbuckle, embraces West Florida, Alabama, Mississippi, Louisiana, Tennessee, and Kentucky; headquarters, New Orleans. It contains seven garrisoned posts, viz: Fort Pickens, near Pensacola, 116 officers and men; Fort Morgan, Mobile bay, 106; Fort Pike, Petite Coquille, 52; Fort Wood, near New Orleans, 63; New Orleans barracks, 110; Baton Rouge barracks, 103; Fort Jesup, Louisiana, 418. Aggregate, 968.

The *2d military department*, commanded by Brevet Brigadier General Taylor, embraces the country west of the Mississippi, north of Louisiana and Texas, and south of the 37th degree of north latitude; headquarters, Fort Smith. It contains four garrisoned posts, viz: Fort Smith, 110 officers and men; Fort Gibson, 388; Fort Towson, 251; Fort Washita, 265. Aggregate, 1,014.

The *3d military department*, commanded by Brevet Major General Gaines, (temporarily by Colonel Kearny, dragoons,) embraces the State of Missouri, (above the 37th degree of north latitude,) Illinois, Iowa, that part of Wisconsin Territory west of the 13th degree of longitude west of Washington, and the Indian country north and west of the lines indicated. It contains seven garrisoned posts, viz: Fort Scott, on the Marmiton, near the southwest boundary of Missouri, 195 officers and men; Fort Leavenworth, three hundred miles above St. Louis, 381 officers and men; Jefferson barracks, near St. Louis, 956; Fort Des Moines, on the river of that name, 107; Fort Atkinson, on Turkey river, Iowa, west of Prairie du Chien, 102; Fort Crawford, Prairie du Chien, 201; Fort Snelling, Falls of St. Anthony, 195. Aggregate, 2,137.

The *4th military department*, commanded by Brevet Brigadier General Brady, headquarters Detroit, embraces the States of Indiana, Ohio, and Michigan, the part of Wisconsin Territory not included in the 3d department, and the Indian country north. It contains five garrisoned posts, viz: Fort Winnebago, Wisconsin Territory, at the portage, 57 officers and men; Fort Brady, Sault de St. Marie, 74; Fort Mackinac, 135; Fort Gratiot, Michigan, 112; Detroit barracks, 312. Aggregate, 690.

The *5th military department*, commanded by Brigadier General Wool, headquarters at Troy, embraces the States of Pennsylvania, New York, Vermont, New Jersey, Connecticut, and Rhode Island. It contains twelve garrisoned posts, viz: Buffalo barracks, 231 officers and men; Fort Niagara, near Youngstown, 53; Fort Ontario, near Oswego, 61; Madison barracks, near Sackett's Harbor, 162; Plattsburg barracks, 80; Fort Adams, near Newport, 202; Fort Trumbull, near New London, 60; Fort Columbus, 357; Forts Lafayette 62, and Hamilton 129, in New York harbor; Fort Mifflin, near Philadelphia, 70; Carlisle barracks, 67. Aggregate, 1,534.

The *6th military department*, commanded by Colonel Crane, 1st artillery, headquarters at Portsmouth, New Hampshire, embraces the States of Massachusetts, New Hampshire, and Maine. It contains four garrisoned posts, viz: Hancock barracks, at Houlton, Maine, 272 officers and men; Fort Sullivan, Eastport, 62; Fort Preble, near Portland, 69; Fort Constitution, near Portsmouth, 65. Aggregate, 468.

The *7th military department*, commanded by Colonel Walbach, 4th artillery, headquarters Fort Monroe, Virginia, embraces the States of Delaware, Maryland, and Virginia. It contains three garrisoned posts, viz: Fort McHenry, near Baltimore, 123 officers and men; Fort Severn, Annapolis, 58; and Fort Monroe, Virginia, 420. Aggregate, 601.

The *8th military department*, commanded by Brevet Brigadier General Armistead, headquarters Fort Moultrie, Charleston harbor, embraces the States of North Carolina, South Carolina, and Georgia. It contains five garrisoned posts, viz: Fort Johnston, Smithville, North Carolina, 64 officers and men; Fort Macon, near Beaufort, North Carolina, 65; Fort Moultrie, Charleston harbor, 226; station near Augusta arsenal, Georgia, 56; Oglethorpe barracks, Savannah, Georgia, 107. Aggregate, 518.

The 9*th military department*, commanded by Brevet Brigadier General Worth, headquarters St. Augustine, embraces East and Middle Florida. It contains three garrisoned posts, viz: Fort Marion, at St. Augustine, 251 officers and men; Key West, 95; Fort Brooke, Tampa Bay, 277. Aggregate, 623.

Major General Scott has the immediate command of the army. His headquarters, for the convenience of communication with the department, are at Washington.

The *Adjutant General* is stationed at headquarters. He is charged with the duty of issuing and disseminating general orders from the President, the Department of War, and Commanding General, affecting the army proper and the various departments into which it is distributed. He has also charge of the records and military correspondence of the army, and the superintendence of the recruiting service.

The *Quartermaster General* has charge of the quartermaster's department of the army, which embraces quarters, transportation, clothing, &c. The latter item has been added to his duties by the act of 23d August, 1842, which abolished the office of commissary general of purchases.

The *Commissary General of Subsistence* has charge of the subsistence of the entire army, and the supervision and preparation for settlement of all accounts connected therewith.

The *Paymaster General* has, as the title of his office would indicate, the charge of paying the troops, and the supervision and preliminary settlement of the accounts of the paymasters of the army.

The *Surgeon General* has charge of the medical department of the army, including hospitals, hospital stores, medicines, and the surgeons and assistant surgeons of the army.

The *Engineer bureau*, in charge of the colonel of that corps, has the care and supervision of the erection and repair of fortifications and the military academy.

The *Topographical bureau*, under charge of the colonel of that corps, has charge of all the military and civil surveys under the department, military reconnoissances, the construction of all civil works, roads, and harbor improvements.

The *Ordnance bureau* has charge of that branch of the service relating to arms, equipments, and munitions of war. To it has also been confided the charge of our mineral lands.

The *Pension bureau* is in charge of the Commissioner of Pensions, who, under the direction of the Secretary of War, executes the duties of examining and deciding on claims for pensions, under the several acts of Congress granting allowances to officers and soldiers of the revolutionary war and their widows, as well as to invalids, rendered so in the military service of the United States.

The *Commissioner of Indian Affairs* has, as the title indicates, charge of the multifarious relations subsisting between the United States and the various Indian tribes.

By the act of the 23d of August, 1842, very considerable reductions were made in the army. The reductions provided for by that act are being carried out according to its provisions; and the expirations of the terms of enlistments, discharges, and deaths, will soon reduce the army below the number authorized by law, so as to require enlistments of recruits to keep up the number. That law abolished the office of one inspector general, three paymasters, two surgeons, and two assistant surgeons, and directed that number of paymasters, surgeons, and assistant surgeons, to be discharged within one month after its passage, but gave no such directions as to the discharge of one inspector general; and, consequently, both are yet retained in service, and the appropriation acts for the last and present years provided means for the payment of the compensation allowed by law. It is respectfully recommended that so much of the 4th section of the act of 23d August, 1842, entitled "An act respecting the organizatian of the army, and for other purposes," as abolishes the office of one inspector general, be repealed. The services of the two valuable and experienced officers filling those stations are deemed essential to the well-being of the army.

The first section of the same act converted the 2d regiment of dragoons, after the 4th of March last, into a regiment of riflemen. The regiment has accordingly been dismounted, and the horses sold. It is respectfully recommended that this provision of that law be repealed, and the said regiment be remounted and continued as the 2d regiment of dragoons. This can be effected at a very moderate expense. An advance of perhaps twenty per cent. on the amount for which the old horses were sold will furnish them with new and better horses. Their uniform has not been changed, in consequence of the quantity of dragoon clothing on hand, and a hope that the result now recommended might be consummated. The extended frontier on our entire West is subject to Indian incursions. Many of the tribes are mounted, and it is impossible either to overtake them, to protect the inhabitants, or repress the marauding of the savages, by the small body of unmounted soldiers which would be stationed on that frontier, or in the Indian country, or brought to act against them. Celerity of movement is required, and is of the utmost importance to the security of our citizens. This can, it is believed, alone be completely effected by dragoons; and the single regiment in service is not sufficient for the purpose.

Some further provision is believed to be necessary effectually to preven duelling between officers of the army and citizens, many of the officer who constitute the military courts holding that the provisions of the 25th 26th, and 27th sections of the rules and articles of war have relation onl to officers of the army in disputes among themselves. The propriety o this construction is at least doubtful; but explicit legislation on the subjec would put the matter beyond all doubt. The practice is a barbarous one, an should be suppressed in a civilized and Christian country. To the credit o the army, it must be said that it has been almost if not entirely abolishe among the officers, and their gentlemanly and decorous conduct toward each other has prevented disputes and trials for alleged offences in an almost unprecedented degree.

The officers and men have been kept in a constant state of employmen and there have been but few removals of troops from one post to anothe The state of our relations with Great Britain has enabled the Commanding General to withdraw from Forts Fairfield and Kent, on the Northeaster frontier, the troops there stationed. Their positions were such as to render subsistence very expensive; and to have kept them there would hav involved the cost of cutting a military road to those posts from Houlton, at a enormous charge, and without any adequate or corresponding benefit. This movement led to the change of some other troops stationed in the Eastern States, so as to bring the 2d regiment of artillery more immediately under the command of its own colonel. Several companies have been removed from Florida to other posts, there being no apprehension of any danger in that region from Indians, the number of warriors remaining being now reduced to less than one hundred, and they evincing no hostile disposition.

The estimates for the army proper for the ensuing year, it will be perceived, fall $90,648 10 short of those of the last year, although it embraces $27,364 70 for the expenses of recruiting, which was not required last year, in consequence of the reduction of the army, and $9,420 for the three months' pay allowed to the men whose term of service will expire during the current year, and may re-enlist.

To the many valuable suggestions contained in the report of the Commanding General attention is invited. From his known ability and experience, they are entitled to the highest respect. The statements from the office of the Adjutant General, accompanying that report, give, in minute detail, the state and condition of the whole army, arranged with system and order.

The quartermaster's department is to be classed as a part, and a most essential part, of the army proper. The report of the major general in charge of this branch of the service contains his views in relation thereto. To his suggestions, as those of knowledge and experience, I respectfully ask attention, and especially to so much as relates to the importance of the officers of the line being detailed in order for the staff duties of that department, thus making them more proficient in both branches of service; to the propriety of erecting barracks and defences at Forts Gibson and Brady, and also to the necessity of furnishing other buildings than casemates for the quarters of the men, as well as for hospitals in the regular fortifications which have been erected. This is a measure essentially necessary for the comfort and health of the troops, and for which appropriations will be necessary.

If the present regulation in regard to travelling expenses is found to work oppressively, it can be changed or modified by the Secretary of War without further legislation. It was adopted by my predecessor, to correct what was believed to be an abuse of the former system.

The Quartermaster General's department is efficiently organized and faithfully administered. Its importance is manifest to all military men, and I think it cannot be diminished without essential injury to the interests of the service. In regard to the staff of the army, it may be laid down as a sound rule, that it should never be regulated by the number of troops in the line, but by the extent of the country over which the army is spread. Hence our staff must necessarily, in time of peace, be more disproportionate to the number of troops in service than that of any other nation on the globe.

The business of the Subsistence department has been performed with great accuracy and method. The troops have been well and regularly supplied, at reduced cost, and the accounts, as the Commissary General truly states, have been promptly rendered.

The report of the Paymaster General exhibits the state of that department in a very satisfactory manner, and shows that its head has kept up a strict system of accountability, and caused the troops to be paid with as much promptness as their scattered positions would admit.

The report of the Surgeon General exhibits a gratifying evidence of the fidelity with which the medical branch of the military service has been administered, and shows that, by the observance of a strict system of economy, compatible with the care and attention due to the sick and infirm, a considerable reduction has been made in the average cost of medical supplies per man.

With this report are submitted the meteorological reports from the various military posts, and the report of Professor Espy in relation to the observations as to the progress and course of storms, &c., taken at the same and other places. These furnish numerous important as well as curious facts in those branches of science, which, when tested by further observations, may lay the foundation for definite knowledge on subjects heretofore little studied and understood.

The observations of the Surgeon General in relation to the use of casemates for quarters and hospitals at permanent fortifications (which subject is also alluded to in the Quartermaster General's report) are respectfully submitted, as showing the existence of an evil which sound policy as well as humanity requires to be remedied.

The report from the Engineer bureau gives in detail a statement of the operations of that corps, as well to the fortifications, which are directly within its province, as in relation to the military academy, which by act of Congress is placed under its immediate care. The business of this department, in the construction of fortifications authorized by law, has progressed with spirit and efficiency; and the utmost attention has been given to the work, as well by the commandant who has supervised and directed the whole as by the several officers in charge of the respective works. This is manifested by the progress to completion of many of them, and the progress towards it in others, within the past year.

The report of this department cannot well be condensed or referred to in detail, but is recommended to attention, as containing a very full and interesting account of the state and condition of our works of defence, the necessary repairs to be made in existing works, and of the appropriations deemed necessary thereto. It also contains recommendations for the purchase of the State works and sites on Staten island, with a view to their reconstruction; the commencement of fortifications at Sandy Hook; at Sollers's point, in Maryland; on the coast of Georgia; between Mobile bay and the Rigolets; on the approaches to New Orleans, described in the report; the closing of Hog Island channel, Charleston harbor, South Carolina; the continuation of the Cumberland road through Ohio, Indiana, and Illinois; and the payment of the sum of $1,359 81, incurred in making a survey for the continuation of that road to Jefferson city, Missouri, under a resolution of the Senate of the 30th of January, 1839: all which are respectfully recommended to attention.

It is deemed proper to add, that the construction of military works upon the Dry Tortugas, Key West, and Biscayne Key, or such other positions on and near the extremity of the peninsula of Florida, as on examination and survey shall be found most eligible, is deemed of great importance, if not essentially necessary, in our line of coast defences.

The military academy at West Point exhibits continued evidence of improvement in the course of instruction, and the academic board are eneavoring to keep pace, in their system, with the advances which science s making in all parts of the world. It continues annually to graduate a umber of young gentlemen, taught, at the public expense, those branches of science which are deemed essential to military operations. By the act of 3d March last, Congress directed that no board of visiters should be elected, as had for many years been usual. To enable the department to have correct information as to the discipline, course of studies, and general ate and condition of the institution, on the 24th of May last I detailed he following officers of the army to compose a board of inspection of that stitution for the present year, to wit: Major General Scott, Brevet Brigadier General Brooke, Colonel Bankhead, Captains Mordecai, W. H. Swift, Brewerton, L. J. Beall, J. C. Casey, and W. G. Freeman. This board assembled at West Point, agreeably to instructions, on the 5th day of June, and attended throughout the examination of the classes, and inspected the stitution thoroughly. The performance of these duties occupied a period eighteen days, during a portion of which the head of the War Department attended in person.

Whilst I fully concur in the importance of continuing the practical instruction in artillery, cavalry, and infantry operations, I also recommend hat the views of the colonel in charge of the bureau of Engineers, in relation to the proposed corps of sappers and miners, be carried out, for the asons which he has so forcibly set forth.

In addition to the estimates for the military academy, recommended by e chief of the corps of engineers, I would ask that a small sum be added o the appropriation, to enable the professor of civil and military engineering to visit and inspect the more recent and important works of our country, which exhibit the best specimens of dams, locks, canals, bridges, docks, ailroads, inclined planes, and other important machinery or mechanical provements, in order that they may be fully explained to the cadets, as atters of instruction and improvement.

Speaking from personal observation, I must say that the superintendent nd the several professors and instructers deserve great commendation for he devotion they exhibit in governing the institution and educing the owers of mind of the youth committed to their charge; and that the neral good conduct of the young gentlemen constituting the corps of adets is creditable to them, and exhibits the best evidence of the high rality required of them. From every view I can take of the subject, I g leave to recommend this institution to favorable notice, as in an eminent degree calculated to fit for service those on whom in emergency we st mainly rely to lead and instruct the troops required to defend our untry and maintain its honor in the field. The estimates for this institution for the next year, it will be perceived, are $14,472 50 less than the ppropriation of the previous year.

The report of the chief of the bureau of Topographical Engineers is one f great interest to the country at large, embracing as it does such a variety of subjects, and extending in its operations over the whole Union. The attention of the officers of this corps to their duties has been assiduous, nd the results show the importance of their labors. Important and valuable as the general topographical work has been, the subject of the harbors our lakes, and the improvement of our Western rivers, will, no doubt, specially command the attention of the National Legislature, as not only connected with the safety of an extensive commerce, but as essentially necessary to naval operations on the lakes in time of war. Great pains have been taken to ascertain the value of the trade upon the lakes, which is exhibited in detail, as far as our imperfect means of information would furnish the facts. A trade, which two years since was of the value of more than sixty-five millions of dollars, has been since rapidly increasing, and is probably now equal in amount to one hundred millions.

The commerce of the Mississippi and its tributaries is of immense value, and a continuance and extension of the system now in progress, for removing obstructions in those streams, and improving their channels, is called for by every consideration of public policy, as due to the general interests of our Western fellow-citizens. The amount of benefit conferred by the appropriations already made is an earnest of what will be effected by continued, regular, and systematic efforts.

We have, as the report of the chief of the Topographical bureau states, "of nearly all our seaports surveys of positions for fortifications, and of entrances by water into our several harbors, which will furnish, when desired, correct information on all those subjects." Knowledge, however, to the same extent, does not exist in regard to the lakes and lake harbors.

The recent extinction of the Indian title to the southern and western shore of Lake Superior, and the value of those lands for their mineral wealth, will probably lead to the peopling of that region with great rapidity. Sound policy, therefore, dictates that means be promptly taken to make an uninterrupted navigation from that lake to Lake Huron. This can be effected by the construction of a canal about a mile in length through the lands of the United States, around the falls of St. Mary, with two locks suitable for passing steamboats, the expenses of which will not probably exceed $100,000. This will be more than made up by the increased value of the public lands affected by it.

By the commencement of topographical surveys west of the Mississippi, it is thought that assurance has been given for their prosecution. The results, as far as ascertained, are highly satisfactory and creditable to the scientific gentlemen in charge of the respective works. It is hoped that the surveys already commenced on the Platte and Kanzas rivers may be prosecuted, and that means may be furnished, and authority given, to construct a road through the lands belonging to the United States, so as to afford a safe and expeditious route for emigrants to the Oregon Territory. This could be done at a moderate expense, as there would generally be little to do, more than survey and make it out, and construct bridges over the larger streams. The survey should also embrace the proper positions for military posts, which will be found necessary for the purpose of keeping the Indians in order, preventing misconduct in traders among them, and furnishing security to travellers crossing the Rocky Mountains. At these military posts settlements would soon be formed, and travellers, instead of encountering the troubles, inconveniences, and dangers of a long journey through a wilderness, would find themselves enjoying on the whole route the comforts and security of civilized life.

Reference is also made to the necessity of correct topographical information as to the country between our principal cities and the seaboard. This information should be obtained and put on record, to be used when necessary for the purposes of defence.

The report from the Ordnance bureau shows that the officers connected with that department have promptly accounted for the moneys placed in their hands. In the recommendations for arming our fortifications as their construction advances, and in the necessity of a national foundry, for the purpose at least of ascertaining with certainty where good material can be procured for cannon, I most heartily concur. Many of the cannon now in use, it is believed, would not stand a proper inspection, and are really dangerous, even with ordinary charges. The loss and destruction of life by the bursting of cannon should be guarded against by every means in our power. The best metals should be selected, and be carefully manufactured into cannon at the public foundry. In this way only, it is believed, security would be afforded that the pieces could be safely relied on at all times. The establishment of a national foundry should not, it is conceived, be on a large scale, nor need it involve a considerable expenditure at the outset; but care should be taken to secure such a site as will enable the Government to increase it to any extent that may be required, should it be deemed advisable to extend it beyond the purposes of a test foundry. When the superiority of ores for the purpose is settled, the work could, if such a course be preferred, be let out by contract, at fair and legitimate prices, stipulating for the given quality of iron; the whole process to be superintended in all its stages by an ordnance officer, so as to secure an article as perfect as possible. There are, however, objections urged against having cannon cast by individuals by contract, arising out of the interest of the contractor to increase the weight of the cannon, and to use the metal costing him the least money. Under any mode of constructing them, the most rigid scrutiny should be observed, to save the lives of those by whom they are to be used, and to render the cannon efficient for the purposes for which they were intended.

The state of our national armories reflects credit on the officers placed in charge of them. I visited and inspected that at Springfield in July last, and found it in excellent order. That at Harper's Ferry is also judiciously conducted, as I learn from the report of the Ordnance bureau. That report exhibits in detail the amount of moneys expended at the armories, for the manufacture of arms, for materials, and for repairs and improvements. The usual distribution of arms to the several States has been made in the past year, as shown in the report.

The value of the property under charge of this branch of the service is $17,393,021 07, and in itself shows the amount of pecuniary responsibility in which the officers who have it in charge are involved. The system of keeping and preserving the public arms, accoutrements, munitions, &c., with the arrangement of the accounts and the arsenals, so as to be easily and expeditiously inspected, are such as to entitle the head as well as the other officers of the corps to great credit.

The statements in regard to our lead mines are deeply interesting. Some legislation is undoubtedly necessary to prevent the numerous frauds attempted to be perpetrated in appropriating to individual use, at ordinary prices, lands known to abound with rich mineral. Something must either be done to effect the object, or the lands should be sold at adequate prices, if such could be obtained. The report of the bureau on this subject at the last session of Congress, coupled with that of the present year, contains much valuable information, and exhibits to some extent the losses which the Government is continually sustaining, as well as some of the defects of the present system.

Measures were taken early in the present season to secure the rich mineral region south of Lake Superior from falling into the hands of intruders, who might endeavor ultimately to wrest from the Government those valuable lands, which, in addition to lead, are found to abound in copper ore of a superior quality. The results, as far as ascertained, have been satisfactory, and will be found more at length in the report of the Ordnance bureau. When the full and final report for the year shall have been received from the agent, it can be furnished, if desired.

The duties of the Ordnance bureau are various and responsible, and have been increased by placing the mineral lands under its charge. It is respectfully suggested that the salary of the first clerk of this office be so regulated as to put him on a footing with the chief clerks of the other bureaus.

The estimates from the bureaus of Engineers, Topographical Engineers, and Ordnance, are larger than those of the preceding year. The reason for this increase may need explanation. The chiefs of those bureaus, respectively, have estimated what, in their judgment, will be necessary to carry out those works for which provision has been made by law. If Congress shall not deem it advisable to prosecute all of them, the appropriations can be confined to those deemed of most pressing importance. Again: considerable portions of some of the estimates are for reappropriations of sums heretofore appropriated, but which will revert to the surplus fund by operation of law at the close of the present calendar year.

The report of the Commissioner of Indian Affairs exhibits in great detail the operations of that department for the past year.

Our Indian relations have, in the main, been peaceable, and the exceptions growing out of a few individual acts of violence have not been sanctioned or justified by the tribes to which the offenders belonged.

The emigration of that portion of the Choctaws east of the Mississippi has not yet been effected; but it is hoped and believed that it will commence early in the spring, and continue until most of them will be removed. The department has been assiduously at work endeavoring to effect this object, and thus relieve the State of Mississippi from a population undesirable, and which will be much better off when located among their own kindred and people, now residing west of the Mississippi.

The constant instruction to the agents and sub-agents (which it is believed they are endeavoring to carry out) has been to endeavor to bring the influences of Christianity and civilization to bear upon them, to induce them to settle down permanently to the cultivation of the soil, and thus become domesticated, as it were, on their own territories.

Many of the Southwestern Indians, especially among the Cherokees and Choctaws, have made considerable advances in civilization, and are accustoming themselves to husbandry and planting, surrounding themselves with the comforts of civilized life, and are taking great pains in the education of their children. The Choctaws, early in the present year, appropriated $18,000 of their annuities to education purposes.

The annuities paid to many of the tribes seem to do them little good. So long as they are sure of receiving their annual stipend, they will not exert themselves as they should to earn a subsistence, and in most instances the trader gets the money of the Indian, either in payment of debts incurred in anticipation of the annuity, or for goods brought to him and sold when the annuities are paid. The Indian rarely receives the value of his money, which thus fails of its object to provide for the necessities of the red man. A revision of the whole system may probably result in some better means than any yet discovered to prevent the bounty of the Government from being misappropriated, and the poor Indian from squandering his money on objects of trivial importance. Some further legislative provision is necessary effectually to prevent all persons from introducing ardent spirits among, or disposing of them to the Indians, under any pretext whatever.

The compensation allowed to sub-agents is entirely disproportionate to the responsibilities incurred and duties required of them. They are obliged to give security in amounts varying from $5,000 to $20,000, to reside out of the reach of civilization, to be often exposed to danger and trouble, and for all this they receive but $750 per year. The compensation ought to be increased to at least $1,000 per year, and, in some situations, a discretionary power should be given to increase it to $1,250, which would probably enable the department to secure the services of men better qualified for the work than can ordinarily be obtained for the small allowance now given them. It might also be advisable to give authority, where the proceeding would be proper, to consolidate two or more contiguous sub-agencies into a full agency.

During the recess of Congress, I directed a commencement to be made of a history of all the Indian tribes, as far as the same could be derived from documents in this department. Some progress has been made in it, but it is found that it will have to be suspended during the approaching session of Congress, for want of the necessary force to put upon it. It is a work very much needed, and will, if properly completed, be very valuable.

It is important, more effectually to prevent abuses, and to see that the Indians are fairly dealt with, that the department should have the means of obtaining more direct and official information of the actual state and condition of the several tribes of Indians, and the manner in which the agencies and sub-agencies are conducted, than can now be had. For this purpose, I would respectfully suggest such a modification of so much of the act of 26th August, 1842, as provides "that it shall not, at any time hereafter, be lawful for any accounting or disbursing officer of the Government to allow or pay any account or charge whatever, growing out of or in any way connected with any commission or inquiry, except courts martial or courts of inquiry in the military or naval service of the United States, until special appropriations shall have been made by law to pay such accounts and charges," &c., as to exclude from its operation the office of Indian Affairs, so far at least as to permit the payment of a reasonable compensation to a person or persons to be appointed to make personal inspections and examinations into Indian affairs. It is believed that such inspections and examinations would correct many abuses, and be an actual saving to the Government.

The report of the Commissioner of Pensions exhibits very clearly and distinctly the state and condition of the business of his office. There yet remain on the rolls 21,064 pensioners for revolutionary services, including widows. Under the act of 1838, granting pensions for five years to widows of revolutionary soldiers, 9,895 claims have been presented, of which 7,855 have been admitted. Under the laws granting pensions to invalids for wounds and injuries received in military service, there are now on the rolls 2,720 persons.

The force employed in the office of the Commissioner of Pensions had been considerably reduced, as the business decreased, prior to the present year. The act of 3d March last, extending the acts granting pensions to widows, has greatly increased the business of that office, whilst the appropriation of the present year required the discharge of one clerk. The Commissioner and remaining clerks have been unable, with the utmost diligence and industry, to dispose of the business presented to them. An appropriation of about $2,000 will be requisite for the employment of additional aid, temporarily at least, or they will be unable to perform the business intrusted to them within a reasonable time. It is not right that the legitimate objects of public gratitude should be deprived of the provision made for them by law, for want of means to have their claims examined.

The balances in the hands of pension agents appear large. The returns, however, were made at a time shortly after that at which sums had been remitted for the semi-annual payments falling due in September last. Before this time, the balances have no doubt been considerably reduced.

I think the present system of paying pensions is not the best which could be devised. The act of 3d March, 1837, provided that no compensation or allowance shall be made to any persons or corporations, for making such payments, without authority of law. This provision has compelled the department to employ either banks or officers of banks in most instances as the agents. The actual expenses incurred by them in transacting the business are paid, and it has in many instances been necessary to compensate them indirectly, in order to get the business transacted. This could only be done by keeping considerable balances on deposite in the bank with which the agent is connected, and thus, when deposites are an object, granting a much larger compensation than would be required to pay a person specially for transacting the business. I respectfully suggest an alteration of the law in this particular.

It will be observed that the estimates for the Pension Office are larger for the coming fiscal year than they were for the present. This has been rendered necessary by the act of 3d March last, extending the act granting pensions to widows, &c.

Since the last annual report, there has been a considerable reduction in the number of unsettled accounts in the offices of the Second and Third Auditors. In the former office there are two hundred and eighty-two accounts remaining unsettled, all presented within the present year, making a reduction of five hundred and ninety. In the latter there are nine hundred and forty-five accounts remaining unsettled, of which one hundred and sixty-eight were presented in 1841, three hundred and seventy-five in 1842, and four hundred and two in 1843—the reduction being five hundred and thirty-four. Justice to persons having claims against the Government, or accounts to settle with it, requires that means should be provided for the more prompt settlement of their accounts. The officers named are using all the means which they now possess, with a praiseworthy diligence, but they are insufficient to accomplish the object.

Considering the relations in which the offices of Second and Third Auditors stand to the War Department, their position is anomalous. They transact the business of this department, and, in all matters depending upon equitable discretion, refer to, and are governed by, the decision of the Secretary of War. From his position, he must be best capable of judging of the manner in which they should be organized, and the business conducted in them. Yet, as to these, they are entirely under the control of another department of the Government. It would be more systematic to make them branches of this department, leaving the Second Comptroller, an officer of the Treasury, to decide, ultimately, as he now does, upon the business transacted by them.

The building at present occupied as the Department of War is insufficient for the purpose, and does not possess the security of being fire-proof. It only accommodates the War Department proper, the Commanding General, Adjutant General, Quartermaster General, Commissioner of Indian Affairs, and Second Auditor. The business of seven important bureaus of the department, to wit: of the Paymaster General, Surgeon General, Engineers, Topographical Engineers, Ordnance, Commissary General of Subsistence, and Commissioner of Pensions, is transacted and their records kept in rented buildings, separated from the public edifice, and still more insecure than it. The safety of the public records and convenience in the transaction of business require that a secure building should be erected, sufficiently large to accommodate the entire business of the department. This subject has been repeatedly brought to notice, thus far without effect. It is again brought to view, under the hope that the remedy of these evils may not be further postponed.

I take this opportunity to state that I have been greatly aided in performing the labors of the office I hold by the Commanding General and the heads of the several bureaus of the department, whose assiduity and promptness in their attention to business deserve all praise.

J. M. PORTER,
Secretary of War.

To the PRESIDENT.

Documents accompanying the report of the Secretary of War.

1. Report of the Major General commanding the army.
2. Report of the Quartermaster General.
3. Report of the Commissary General of Subsistence.
4. Report of the Paymaster General.
5. Report of the Surgeon General.
6. Report of the Chief Engineer.
7. Report of the Chief Topographical Engineer.
8. Report of the officer in charge of the Ordnance bureau.
9. Report of the Commissioner of Indian Affairs.
10. Report of the Commissioner of Pensions.

No. 1.

REPORT OF THE MAJOR GENERAL COMMANDING THE ARMY.

HEADQUARTERS OF THE ARMY,
Washington, November 24, 1843.

SIR: Herewith, I have the honor to submit the tabular views of the army, required yearly from general headquarters, as carefully prepared by the Adjutant General for my examination. The tables are—

1. *Organization of the army,* (marked A ;)

2. *General return* (or *actual* state) of the army, (now and since the act of August 23, 1842,) undergoing a gradual reduction, (marked B ;)

3. *Distribution of the army* (with a view to frontiers) among military geographical departments and posts, (marked C ;) and,

4. *Exhibit of enlistments,* or rather re-enlistments (177) between the end of August, 1842, and the beginning of October, 1843, into certain companies which successively fell below the new complement of men, or ultimate standard provided by law, (marked D.)

The motives and authority for that small number of re-enlistments will both fully appear by reference to paper D, and the first section of the act of August 23, 1842. There is, however, remaining an excess of a few hundred enlisted men *in other* companies, (compared with the ultimate standard,) which excess, according to average casualties, (deaths, discharges, &c.,) must disappear in a month or two. To keep up the establishment, it will then be necessary to recommence the *general* recruiting service; particularly, as returning, in 1838 and 1839, from the unsuccessful experiment of *three* years' enlistments, to the old term of five years, the number of discharges in all 1844, will be unusually great.

The Florida war having been happily terminated by Brigadier General Worth, in the summer of 1842, the army has been engaged in no field operations, professionally speaking, since. Large detachments of the late *first* (now *only*) regiment of dragoons, have, however, within the last five months, been actively employed in escorting to and from the frontier of New Mexico (the Upper Arkansas) several caravans, American and Mexican, trading between the Missouri and Santa Fe. This escort duty, cheerfully executed, has been attended by considerable extra expense to Government, besides the loss of horses, and much risk and privation to the troops. The officers (particularly Captain Cooke) and their companies, have, in those distant expeditions, displayed an intelligence, enterprise, and hardihood, which entitle them to very great praise. Not the slightest loss was sustained by either of those caravans, (in possession of large amounts of specie and merchandise,) either from the roving Indians (the Arabs of the prairies) or the more lawless white bandits who have recently infested those remote regions.

The movements and interchanges of troops, since the date of my last annual report, have been but few, (here and there a single company,) and need not be specially noticed. They have had for their object, besides attending Indian agents, payments, and councils, under apprehended danger, to bring mpanies of the same regiment (mixed in coming out of Florida at differ- periods) into comparative contiguity; that is, within the same geograph- limits, in order to facilitate regimental correspondence and inspections, hout which there can be no exact responsibility or discipline. The sent district of each regiment, and the post of every company, may be nd by a glance at the table C. They are nearly all on the exposed ntiers, inland and Atlantic, ever ready to lead or to co-operate with the itia in defence of country; to give aid when required to the political l civil authorities—less potent in certain distant regions—and to set example, on all occasions, of obedience to law and order. A happy tance of prompt interposition of that kind was given, some months ago, by ptain Webster, of the 1st artillery, commander at Fort Kent, in the Mada- ska settlement, against the violators (from the side of New Brunswick, without provincial authority) of the liberty of one of our citizens.

The only body of troops, beyond a company, or part of one, (to guard portant arsenals,) stationed any where in our interior, is to be found at ferson barracks, near St. Louis, as the *Western reserve.* For a lit- more than a year, sixteen companies, equally of the 3d and 4th regi- nts of infantry, have been held in that position; each regiment having own out two companies upon the frontiers.

As the motives or advantages of this reserve do not seem to have been parent, even to many intelligent citizens and political functionaries, I beg ave to state some of them in this place.

Jefferson barracks may be assumed as the interior centre of a cordon, mmencing at the head of Lake Superior, and extending beyond our set- ments to the Gulf of Mexico. That cordon is partially (*not* sufficiently) pported by military posts, with small garrisons, consisting of from one seven companies each, furnished by the dragoons, the 1st, 6th, and 7th giments of infantry, and the rifle regiment, together with the four com- nies detached from the reserve. To give to so extended a line of fron- r (in length about 1,700 miles) reasonable security, *without a reserve,* ould require at least five additional regiments.

A glance at the map will show that almost every part of that cordon, en from any of the Northwestern lakes to Tampa Bay, may be promptly d cheaply reached by the reserve, with its necessary supplies, and mostly steam, following the great rivers and lakes, and the canals of Illinois, diana, and Ohio. Such facilities of rapid river, lake, and canal naviga- n, over so immense a space, are not to be found on any other part of the obe. And so might the reserve [illegible] ught to Baltimore by steam in less an ten days, including three on [illegible] ween Wheeling and Cumberland.

But a reserve, to be d[illegible] ght to the point of action, must ave been held in a [illegible] litary instruction; and, ith a view to eco[illegible] essary supplies. The osition of Jeffer[illegible] l of those great condi- ions; and und[illegible] and example of Colo- el Kearny, f[illegible] ne re-establishment of hat reserv[illegible] at advances in moral nd tacti[illegible] administration. He is rain[illegible] enting his name to the W[illegible] and promotion.

[illegible] with this subject, not likely sons, scattered along a wild frontier, always, after a time, deteriorate in morals and military efficiency. Troops must, at least to some extent, be *massed*, with a view to the benefit, around and among them, of a sound public opinion, and, also, to inspire the ardor of military competition.

In a previous report, I took the liberty to speak of the great loss to the Western frontier which would result from dismounting the then 2d dragoons. That regiment has been serving on foot, as riflemen, since the 4th of March last. The experience of the current year has realized all my early apprehensions. One regiment of dragoons, however efficient, is not enough for that prairie frontier, covered with mounted Indians, independent of the recent superadded duty of escorting Santa Fe caravans. The riflemen are worthy of being again placed in the saddle, and I trust the regiment and the wants of the far West may find favor, through the Executive, with Congress.

I have recently, in oral communications, pressed on the attention of the department the extreme want of comfortable hospitals and quarters at many of the fortifications on the seaboard, in lieu of the cramped and most unwholesome *casemates* now in general use for both purposes. In time of war, officers and men are ever ready to brave disease and death in any form, in defence of country; but it would seem against the interest of the country and the credit of the Government, to lodge troops, with their sick, during, perhaps, a long-continued peace, in such miserable places. I recall the subject in writing, as it may be deemed proper to ask for an appropriation for suitable buildings, such as may be readily demolished, if in the way of defence, on the near approach of a public enemy.

Some further appropriations are required for repairing many of the inland barracks and quarters at permanent posts. These need not be large; but the labor of the troops, though a great saving, cannot, except in certain unappropriated districts, supply the heavy materials.

In my report of the last year, I suggested that, with a view to equalizing the hardships and benefits of the service between regiments of the same *arm*, (as artillery, infantry, or rifle,) I did not soon expect to propose interchanges of positions or districts between them, because none had then been long in position. In the course of 1844 nearly every regiment will have been two years or more in the same district of country; and experience having abundantly shown that periodical interchanges improve and maintain the efficiency of corps, I shall, in the next twelvemonth, propose to the department many such changes. Against the justice and policy of this course, there can be no public objection, other than the extra expense. This, however, under judicious management, will be, comparatively, but inconsiderable.

A sensible progressive improvement in the police, administration, and tactical instruction of the army, is reported by both commanding and inspecting officers. The recent introduction of post chaplains, each of good standing in his respective religious community; the establishment of day schools for soldiers' children, and night schools for the men themselves, with numerous temperance associations—all either set on foot or encouraged by the good example of officers—have had the best effects on the rank and file. Reciprocal respect and good will between the latter and superiors are becoming more and more general. Hence, of late, comparatively but few prisoners, or courts martial, and fewer desertions. The larger garrisons of Fort Monroe (Hampton roads) and Jefferson barracks, are reported as the most distinguished in those admirable improvements nd reforms; and I have not heard of a duel between any two of our officers in a long series of years. Education, religion, good morals, and good manners, seem, in a gallant profession, wholly to have suppressed that most uncertain and most barbarous of appeals.

Of the discipline of the army—that important element of efficiency—prompt and cheerful obedience to law and to lawful commands, including the ertain punishment of every breach of either; of *discipline*, thus technically nderstood, I may say, if it be not universally respected and enforced on the art of commissioned officers, the exceptions have been of late, but few, nd are becoming yearly fewer. Here, again, as in respect to morals, cience, and literature, the benefits and beauty of an education at the nited States military academy are highly conspicuous in the staff, in orps, and in regiments. Throughout the whole, directly and indirectly, the tandard of excellence has been greatly elevated by that institution. One fficer, (occasionally on duty,) with rank sufficient to render his example f disobedience, &c., highly mischievous; some hesitancy on the part of everal courts martial to punish officers for unlawfully striking or beating oldiers, and the positive refusal, as yet, of an existing court to award any orrection in a like case—these are the principal exceptions, under the ead *discipline*, which call for animadversion in a solemn report. The esitancy, in some former courts, was soon overcome by reason and calm dvice, at the instance of the Executive. The court, remaining contumacious, is, I am sorry to say, composed of officers taken from those other ise fine regiments, the 3d and 4th infantry, now in reserve, at Jefferson arracks. I need scarcely add, that this case and that of the individual f rank alluded to above are not, in the special matters, under my control. ee act amending the 65th article of war, approved May 29, 1830, which, erhaps, in a hasty moment, found a place on the statute book. By its irst section—new to our service, and as utterly unknown to every other—commander of a military geographical department or division, no comander of a particular army operating in the field, and not the commander f the entire army at general headquarters, can send any breach of discine, coming to his knowledge, or committed under his eye, to a court artial, because, in doing so, he would render himself "the accuser or osecutor," and, as such, be prohibited, by the new provision, from apinting a court for the trial of the offence! Under such a restriction, it not too much to say that no general whatever could hope to conduct a gle campaign with success. With the appearance of guarding the inests and feelings of all junior officers, the law is itself the severest rection on them, in supposing it possible that juniors, no matter by whom tailed, might, at the prosecution of the commander, be subservient enough inflict punishment against conscience, justice, and law!

The good of the service, in my humble opinion, still calls for the several gislative meliorations heretofore recommended by me, and they might repeated in this place; but I forbear. Should those suggestions be emed of any value, it would be easy to find them in former reports, und up in the printed Congressional documents.

I have the honor to remain, sir, with high respect, your obedient serant,

WINFIELD SCOTT.

Hon. J. M. Porter,
Secretary of War.

A.—Organization of t

REGIMENTS, &c.	Major general.	Brigadier generals.	Adjutant general.	Asst. adjts. gen. (maj. brvt.)	Asst. adjts. gen. (capts. brvt.)	Inspector general.	Quartermaster general.	Asst. quartermasters general.	Dep. quartermasters general.	Quartermasters.	Assistant quartermasters.	Com. general of subsistence.	Asst. com. gen. of subsistence.	Coms. of subsistence (majs.)	Coms. of subsistence (capts.)	Surgeon general.	Surgeons.	Assistant surgeons.	Paymaster general.
General staff	1	2	1	*2	*4	1	1	2	2	4	*28	1	1	2	*4	-	-	-	-
Medical department	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	20	50	-
Pay department	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Purchasing department	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corps of engineers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corps of topograp'l engineers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ordnance department	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Regiment of dragoons	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1st regiment of artillery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2d regiment of artillery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3d regiment of artillery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4th regiment of artillery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aggregate of artillery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1st regiment of infantry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2d regiment of infantry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3d regiment of infantry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4th regiment of infantry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5th regiment of infantry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6th regiment of infantry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7th regiment of infantry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8th regiment of infantry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aggregate of infantry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Regiment of riflemen†	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aggregate	1	2	1	*2	*4	1	1	2	2	4	*28	1	1	2	*4	1	20	50	1

* General staff officers of these respective grades being taken from the line of the army, a counted for in their several regiments, are not included in the aggregate of 8,613. The l thorizes the appointment of an unlimited number of assistant commissaries of subsistence fro subalterns of the line, according to the necessities of the service.

† There being no change made by law in the organization of the late 2d regiment of goons when "converted into a regiment of riflemen," after the 4th of March, 1843, (und act of *August* 23, 1842,) the original dragoon organization is necessarily retained; but the *fa and blacksmiths*, not being wanted in a "regiment of riflemen," they have been discharged the service, although not so required by law.

R. JONES, *Adj. Gen. U. S.*

Adjutant General's Office,
Washington, November 30, 1843.

of the United States, 1843.

Lieutenant colonels.	Majors.	Adjutants.	Captains.	First lieutenants.	Second lieutenants.	Sergeant majors.	Quartermaster sergeants.	Sergeants.	Corporals.	Principal musicians.	Chief buglers.	Buglers.	Musicians.	Farriers and blacksmiths.	Artificers.	Enlisted men of ordnance.	Privates.	Total commissioned.	Total non-commissioned officers, musicians, artificers, and privates.	Aggregate.
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	-	56
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71	-	71
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	16
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
2	4	-	12	12	12	-	-	-	-	-	-	-	-	-	-	-	-	43	-	43
1	4	-	10	10	10	-	-	-	-	-	-	-	-	-	-	-	-	36	-	36
1	4	-	10	6	6	-	-	40	-	-	-	-	-	-	-	250	-	28	290	333
1	1	1	10	10	10	1	1	40	40	1	2	20	-	10	-	-	500	34	615	649
1	1	-	10	20	10	1	1	40	40	-	-	-	20	-	20	-	420	43	542	585
1	1	-	10	20	10	1	1	40	40	-	-	-	20	-	20	-	420	43	542	585
1	1	-	10	20	10	1	1	40	40	-	-	-	20	-	20	-	420	43	542	585
1	1	-	10	20	10	1	1	40	40	-	-	-	20	-	20	-	420	43	542	585
4	4	-	40	80	40	4	4	160	160	-	-	-	80	-	80	-	1,680	172	2,168	2,340
1	1	-	10	10	10	1	1	40	40	2	-	-	20	-	-	-	420	33	524	557
1	1	-	10	10	10	1	1	40	40	2	-	-	20	-	-	-	420	33	524	557
1	1	-	10	10	10	1	1	40	40	2	-	-	20	-	-	-	420	33	524	557
1	1	-	10	10	10	1	1	40	40	2	-	-	20	-	-	-	420	33	524	557
1	1	-	10	10	10	1	1	40	40	2	-	-	20	-	-	-	420	33	524	557
1	1	-	10	10	10	1	1	40	40	2	-	-	20	-	-	-	420	33	524	557
1	1	-	10	10	10	1	1	40	40	2	-	-	20	-	-	-	420	33	524	557
1	1	-	10	10	10	1	1	40	40	2	-	-	20	-	-	-	420	33	524	557
8	8	-	80	80	80	8	8	320	320	16	-	-	160	-	-	-	3,360	264	4,192	4,456
1	1	1	10	10	10	1	1	40	40	1	2	20	-	10	-	-	500	34	615	649
18	26	2	172	208	168	14	14	600	560	18	4	40	240	20	80	250	6,040	716	7,880	8,613

Dragoons—*enlisted* men - - - - - - - - -	615
Artillery—*enlisted* men - - - - - - - - -	2,168
Infantry—*enlisted* men - - - - - - - - -	4,192
Riflemen—*enlisted* men - - - - - - - - -	615
Total non-commissioned officers, musicians, artificers, and privates - -	7,590

WINFIELD SCOTT.

HEADQUARTERS OF THE ARMY,
Washington, November 30, 1843.

of the United States, 1843.

Lieutenant colonels.	Majors.	Adjutants.	Captains.	First lieutenants.	Second lieutenants.	Sergeant majors.	Quartermaster sergeants.	Sergeants.	Corporals.	Principal musicians.	Chief buglers.	Buglers.	Musicians.	Farriers and blacksmiths.	Artificers.	Enlisted men of ordnance.	Privates.	Total commissioned.	Total non-commissioned officers, musicians, artificers, and privates.	Aggregate.
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	-	56
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71	-	71
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	16
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
2	4	-	12	12	12	-	-	-	-	-	-	-	-	-	-	-	-	43	-	43
1	4	-	10	10	10	-	-	-	-	-	-	-	-	-	-	-	-	36	-	36
1	4	-	10	6	6	-	-	40	-	-	-	-	-	-	-	250	-	28	290	323
1	1	1	10	10	10	1	1	40	40	1	2	20	-	10	-	-	500	34	615	649
1	1	-	10	20	10	1	1	40	40	-	-	-	20	-	20	-	420	43	542	585
1	1	-	10	20	10	1	1	40	40	-	-	-	20	-	20	-	420	43	542	585
1	1	-	10	20	10	1	1	40	40	-	-	-	20	-	20	-	420	43	542	585
1	1	-	10	20	10	1	1	40	40	-	-	-	20	-	20	-	420	43	542	585
4	4	-	40	80	40	4	4	160	160	-	-	-	80	-	80	-	1,680	172	2,168	2,340
1	1	-	10	10	10	1	1	40	40	2	-	-	20	-	-	-	420	33	524	557
1	1	-	10	10	10	1	1	40	40	2	-	-	20	-	-	-	420	33	524	557
1	1	-	10	10	10	1	1	40	40	2	-	-	20	-	-	-	420	33	524	557
1	1	-	10	10	10	1	1	40	40	2	-	-	20	-	-	-	420	33	524	557
1	1	-	10	10	10	1	1	40	40	2	-	-	20	-	-	-	420	33	524	557
1	1	-	10	10	10	1	1	40	40	2	-	-	20	-	-	-	420	33	524	557
1	1	-	10	10	10	1	1	40	40	2	-	-	20	-	-	-	420	33	524	557
1	1	-	10	10	10	1	1	40	40	2	-	-	20	-	-	-	420	33	524	557
8	8	-	80	80	80	8	8	320	320	16	-	-	160	-	-	-	3,360	264	4,192	4,456
1	1	1	10	10	10	1	1	40	40	1	2	20	-	10	-	-	500	34	615	649
13	26	2	172	208	168	14	14	600	560	18	4	40	240	20	80	250	6,040	716	7,880	8,613

Dragoons—*enlisted* men - - - - - - - -	615
Artillery—*enlisted* men - - - - - - - -	2,168
Infantry—*enlisted* men - - - - - - - -	4,192
Riflemen—*enlisted* men - - - - - - - -	615
Total non-commissioned officers, musicians, artificers, and privates - -	7,590

WINFIELD SCOTT.

HEADQUARTERS OF THE ARMY,
Washington, November 30, 1843.

D.

ADJUTANT GENERAL'S OFFICE,
Washington, November 7, 1843.

The Adjutant General respectfully submits the following statement, showing the whole number of recruits enlisted in the army, from October 1, 1842, to September 30, 1843, inclusive:

1. BY REGIMENTS.

Regiment of dragoons - - - - - - -	5
1st regiment of artillery - - - - - - -	3
2d regiment of artillery - - - - - - -	24
3d regiment of artillery - - - - - - -	19
4th regiment of artillery - - - - - - -	14
1st regiment of infantry - - - - - - -	4
2d regiment of infantry - - - - - - -	58
3d regiment of infantry - - - - - - -	19
4th regiment of infantry - - - - - - -	8
5th regiment of infantry - - - - - - -	6
6th regiment of infantry - - - - - - -	1
7th regiment of infantry - - - - - - -	3
8th regiment of infantry - - - - - - -	5
Regiment of riflemen - - - - - - -	3
Band at West Point - - - - - - -	5
Total number enlisted, from October 1, 1842, to September 30, 1843	177

2. RECAPITULATION.

By regiments,	Dragoons - - - - - - -	5
	Artillery - - - - - - -	60
	Infantry - - - - - - -	104
	Riflemen - - - - - - -	3
Band at West Point	- - - - - - -	5
		177

3. Amount of recruiting funds advanced to officers of the army, from October 1, 1842, to September 30, 1843 - - -	$8,301 08
Amount of those funds accounted for within the same period -	6,910 17
Balance in the hands of the recruiting officers, September 30, 1843 - - - - - - - - -	1,390 91

4. During the year embraced in the foregoing statement, (from October 1, 1842, to September 30, 1843,) there has been an excess of artificers and privates in the whole army, above the ultimate organization prescribed by the act approved August 23, 1842, and consequently at no period could the general recruiting service be resumed. The few men enlisted in the several regiments consist of "re-enlistments" of non-commissioned officers and musicians, and enlistments in particular companies to *fill the vacancies* which

had happened in these companies after they had been reduced to the standard of the new organization.

In my last annual report relative to the recruiting service (November 14, 1842) I stated that the then excess of 2,160 enlisted men, (viz: non-commissioned officers, musicians, artificers, and privates, of dragoons, artillery, infantry, and riflemen,) over the complement prescribed by the act of August 23, 1842, for the gradual reduction of the army, would be reduced to about 150 by the 31st December, 1843. On the 30th September this excess was reduced to 354, and it is believed that the actual force, (*enlisted men*,) by the close of the present year, will be reduced to the ultimate standard, (7,590.) It will therefore be necessary to resume the general recruiting service, at least on a reduced scale, early in 1844. Estimates have accordingly been duly submitted to the Secretary of War, from which it will appear that, in addition to the balance of $16,811 30, which it is estimated will remain in the Treasury on the 30th June, 1844, of the last appropriation for the "expenses of recruiting," the sum of $27,364 70 is now asked for; which, with the amount estimated for the three months' extra pay ($9,420) allowed by the act of July 5, 1838, to the soldiers who may "re-enlist," makes the aggregate sum of $36,784 70, *now* required to be appropriated for the recruiting service for the fiscal year commencing July 1, 1844.

Respectfully submitted.

R. JONES, *Adjutant General.*

Major General W. Scott,
Commanding the Army.

No. 2.

REPORT OF THE QUARTERMASTER GENERAL.

Quartermaster General's Office,
Washington City, October 25, 1843.

Sir: In compliance with your instructions, I have the honor to report the operations of the branch of the public service confided to my administration during the period embraced by the fourth quarter of the last year and the first and second quarters of the present year.

On the 30th of September, 1842, there remained in the hands of the officers of the department throughout the Union, mostly applicable to the service of the ensuing quarter, a balance of		$312,734 03
To which is to be added—		
1st. Remittances, viz:		
In the 4th quarter of 1842	$389,319 69	
In the 1st quarter of 1843	314,479 20	
In the 2d quarter of 1843	231,734 75	
		935,533 64
2d. Amount of sales of public property, rents, and premiums on drafts		45,600 78
Making a total to be accounted for of		1,293,868 45
From which is to be deducted—		
1st. Expenditures, viz:		
In the quarters preceding September 30, 1842, but the accounts for which were not received in time to be included in my last report	$2,084 96	
In the 4th quarter of 1842	535,455 07	
In the 1st quarter of 1843	253,504 50	
In the 2d quarter of 1843	313,129 32	
	1,104,133 85	
2d. Repayments into the Treasury by officers accountable for public money or property during the year	4,112 78	
		1,108,246 63
Leaving a balance to be accounted for of		185,621 82

the greater part of which was applicable to the service of the subsequent quarter, and all of which it is believed will be found to have been accounted for when the accounts of that quarter shall have been received. The war having terminated in Florida, no special appropriation will be required for the current service there; but the supplies for the whole army, as well as all the expenses attending its operations, will become charges upon the regular appropriations.

Of the unsettled Florida claims, principally growing out of the service of irregular bodies of militia and volunteers, an amount exceeding three hundred thousand dollars has been examined at this office, and sent to the Treasury. The accounting officers have reported adversely on a part of it, and it is doubtful whether one-half of the amount will be paid, at least for some time to come; but a large portion of it is unquestionably just, and I recommend that an appropriation be asked to cover such part of it as the accounting officers may decide shall be paid.

For the quartermaster's department proper appropriations amounting in the aggregate to seven hundred and six thousand dollars are required, and for army contingencies nine thousand dollars, for both of which I present estimates.

For clothing and equipage there will be required for the next fiscal year two hundred and sixty-seven thousand four hundred and twenty-six dollars; but it is believed there will remain in the Treasury of the present appropriation, not required for the present fiscal year, a balance of at least one hundred and seven thousand four-hundred and twenty-six dollars, leaving to be supplied by appropriation one hundred and sixty thousand dollars.

The officers of the department have been actively and usefully employed during the whole period since my last report. The senior colonel is at Philadelphia, where he performs all the duties of the late Commissary General of Purchases; by his efficient arrangements the quality of the supplies has been improved, the accountability rendered more perfect, and the expenses of the establishment considerably reduced. The junior colonel has the important station of New York, on which so many of the other posts depend for a portion of their supplies. He might be more advantageously employed as an inspector, and under the authority of the regulations it was my intention so to employ him; but believing that Congress, by its legislation in regard to the inspector generals of the army, had expressed an opinion adverse to inspectors, I decided, on reflection, to postpone all action on the subject, for the present at least, as a mark of respect due to the opinions of that body, though I am sure that two of the superior officers of the department might be usefully employed for some time to come, if not continuously, on that service; and if so employed, and at the same time clothed with authority to correct all irregularities and abuses on the spot, the expenses might be greatly reduced, without impairing in the slighest degree the efficiency of any branch of the service.

The termination of the war in Florida having diminished the duties connected with the field, as well as those connected with important depots, several of the assistant quartermasters have been ordered to join their companies, where they perform company duty, in addition to that of their department. The same cause has enabled me to reduce considerably the civil branch of the department, including forage and wagon masters. Of this latter class of officers, the law authorizes the conditional appointment of twenty; only four are now employed, one of whom will go out at the end of the year, and the remainder as soon as their services can be dispensed with. The reduction of expense by the discharges already made will exceed thirty thousand dollars per annum.

The great object of supporting a peace establishment is to prepare for war. One of the most efficient means of preparation is an able and well-instructed staff, at all times ready for action. Where the establishment is small, and raw troops have in consequence to be employed on every emergency, it is important that as many officers as possible be qualified for staff duties. With that object in view, I respectfully suggest such a modification of existing laws as shall require all staff officers holding regimental appointments to be returned periodically to their regiments, and their places in the staff supplied by others. Were such a measure authorized, the captains and subalterns of the whole army would, in a few years, receive competent instruction in all that relates to the staff, and acquire habits of business which would render them doubly efficient and valuable to the country in the event of war. Three or at most four years would be a sufficient tour of service in the staff; but, in all cases, as officers attain a rank in their regiments equal to that which they hold in the staff, they should resume their positions in their regiments, whether their full period of service in the staff be completed or not. By the modifications which I suggest, the field appointments in the staff would be open to all the captains in the army, and every one would have an interest in qualifying himself for the promotion, and the harmony of the service, as well as its efficiency, would be promoted by the measure.

Of the works under the direction of this office, the buildings at Fort Smith were continued until the appropriation was exhausted. To render the labor already done of any value to the public, a further appropriation is necessary. The officer superintending the operations estimates the sum of sixty thousand dollars as required to complete all the buildings. For that sum I have submitted an estimate.

I consider it my duty again to ask the attention of the Secretary of War to the condition of Fort Gibson. The troops can have neither health nor comfort there, in their present barracks; and it would be a great error in policy to withdraw them. If they are to remain, suitable barracks and defences should be commenced at once. To spend the small appropriation made last year on the old buildings would be throwing it away; and to commence a new work without a larger appropriation would be useless, as in the course of two or three months we should be compelled to stop for want of money. I recommend an additional appropriation of twenty-five thousand dollars.

At Fort Towson extensive repairs are being made, and additional buildings have been put up, and are nearly completed. An appropriation of six thousand dollars will be required to complete the work.

Measures have been adopted to establish a saw mill at Fort Washita, to facilitate the works in progress there.

At Fort Jesup, Louisiana, the buildings, put up originally of slight materials, required almost entire renewal. Additional buildings were necessary, and are in progress. An appropriation of eight thousand dollars will be required to complete the works.

At Fort Morgan, Mobile point, slight repairs have been made; and at Fort Pickens, near Pensacola, a stable, hospital, and other buildings, have been put up. At both posts barracks are required. There is sufficient room in the casemates for the garrison, but in that climate troops cannot live in casemates; and if the nation cannot afford comfortable barracks and other accommodations for them, such as shall give reasonable assurance of preserving their health in that sickly latitude, it would be humanity to disband them. Though I have considered it my duty to request your attention to the wants of those posts, I have not submitted an estimate for either. They are regularly fortified; and all buildings at fortified posts should be erected under the direction of officers of the corps of engineers, who are supposed to be better able to combine them with the general arrangements for defence than the officers of other corps.

Barracks and other buildings, for the accommodation of two companies, are being erected at Key West. A hospital and storehouses should be immediately commenced, and additional lands purchased. A tract of thirty-five acres, adjoining the public grounds, is offered by the proprietor at a very reasonable price. The sanction of Congress is necessary to the purchase; and I recommend that it be asked.

Key West, the Dry Tortugas, and Key Biscayne, are the great strategic points on our Southern frontier. They should be strongly fortified. Combined with proper naval means, they would command completely the northern entrance into the Gulf of Mexico, and afford better protection to the commerce of the whole West and Southwest than ten times the force employed at any other points or in any other way. To render secure our vast possessions, we must pay more attention to the principles of strategy. On that subject we have an admirable lesson in the policy adopted and persevered in by Great Britain. That nation, by its positions, held by a comparatively small force, has completely checkmated the globe. The three positions named might be rendered impregnable by an expenditure not exceeding four millions of dollars. They would be worth, in military effect, an expenditure of fifty millions.

The barracks and other buildings at St. Augustine, the repair of which was authorized last year, were found, on examination, to be so dilapidated as to require almost entire renewal. They have been thoroughly repaired and renewed. A storehouse and additional barracks for two companies have been erected, and a cistern constructed. Much of the labor has been performed by the troops—a portion of it by prisoners, without extra compensation. Two additional lots of land, adjoining the barracks, are required for public use, for the purchase of which I have presented an estimate.

At Savannah, a hospital and guard house are required; also, additional accommodations for the troops, including the officers.

At Fort Moultrie, three blocks of buildings within the fort have been thoroughly repaired; the public wharf has been repaired, or rather renewed; two ordnance storehouses converted into barracks for companies of artillery; mess rooms, kitchens, &c., erected; other buildings repaired; and a cistern constructed.

At Fort Johnston, North Carolina, the old barracks and quarters have been repaired, and a block of new barracks, a hospital, cisterns, and a wharf, have been constructed. An additional building is required, as officers' quarters.

At Fort Monroe, gun houses and a boat house have been erected, and extensive repairs have been made; and at Fort Macon repairs are in progress, and a hospital authorized.

At Fort Severn, the barracks, quarters, and magazine, have been repaired, and stable, storehouse, hospital, kitchen, and boat house, are being erected.

At Fort McHenry, the barracks and other buildings have been repaired, a gun-carriage house erected, and the ordnance storehouse and gun shed enlarged and extended.

Improvements and repairs have been made at Schuylkill arsenal, Philadelphia, and a subsistence storehouse and carpenter's shop erected at Fort Mifflin. The barracks require repairs, which have been authorized.

In New York harbor, gun sheds have been erected on Governor's island, Bedlow's island, Ellis's island, and Staten island. Quarters, at a cost of near ten thousand dollars, have been erected for the commanding officer of the troops; and the quarters within the walls of Fort Columbus have been repaired.

At Fort Hamilton repairs have been made, but barracks and quarters are required there for both officers and men. The work is casemated, and is represented as totally unfit for the accommodation of troops; a hospital is also required. I present no estimate for this work, believing that all buildings connected with it should be directed by the engineers.

At Fort Trumbull slight repairs have been made, and at Fort Griswold a gun house erected.

At Fort Adams a gun shed and guard house have been erected, the quarters repaired, and stables for the artillery horses completed.

A gun house has been erected at New Bedford, Massachusetts, and repairs have been made to the quarters and other buildings at Fort Constitution, New Hampshire, and at Forts Preble and Sullivan, and Hancock barracks, Maine.

At Plattsburg the stone barracks and quarters have been so far completed as to be already occupied by one company; about $5,000 will be required to complete the buildings already commenced.

At Fort Ontario repairs have been made, a gun house and other buildings erected, and the accommodutions will be completed at a further expense not exceeding $100.

New barracks, quarters, and other buildings, are required at Fort Niagara, for the accommodation of the troops and the protection of the public property; but, as it is a fortified place, I make no estimate, though I consider it my duty to bring to your notice the wants of the service.

At Detroit temporary barracks have been erected, and repairs have been made, and Fort Gratiot has been re-enclosed with pickets; all the buildings there should be renewed, or the troops withdrawn.

Fort Brady should be entirely renewed; and for that purpose I have included an item of $15,000 in my estimate. The buildings at that post were erected of slight materials, some twenty years ago, and were hastened to completion by the approach of winter; they are now completely dilapidated; to repair them would be a prodigal waste of the public means. So far as relates to climate, Fort Brady is further north than any other position occupied by the army; it is the salient point in the line of our frontier defences, and its garrison is exposed to the rigors of an almost Siberian winter. Instead, therefore, of affording the very worst accommodations, as it now does, to the troops, it should afford the best. Cut off, as the officers and men are for several months in the year, from all intercourse with the world, every accommodation not incompatible with the general interests of the service should be extended to them, to alleviate, as far as possible, the privations to which they are subjected; both health and discipline would be promoted by providing such accommodations as the severity of the climate and the military importance of the position render necessary.

At Mackinac valuable repairs and improvements have been made by Captain Scott, and almost without expense; his example is worthy of imitation.

Extensive repairs are required at Fort Winnebago, Fort Crawford, and

Fort Snelling; but they can be made at little expense, by the labor of the troops.

At Fort Atkinson the outstanding debts were greater than they were believed to be at the date of my last report; I have included in my estimate a sum sufficient to pay them. The block houses at that post have been completed.

At Fort Des Moines, established within the year, a hospital, barracks for the men, and quarters for the officers, were so far advanced at the last report, that I entertain no doubt of their completion within the year. Repairs have been made at Fort Leavenworth and Jefferson barracks.

At Fort Scott, on the western frontier of Missouri, the quarters, barracks, hospital, and other buildings, were, at the last report, in such a state of forwardness that no doubt is entertained of the completion of all these buildings by the close of the year, unless the troops, who perform the greater part of the labor, be required for service elsewhere.

In relation to the supplies furnished through this department, and the allowances paid, in place of leaving them to Executive discretion, as has been heretofore done, I submit whether it might not be well to regulate them by law as far as possible. Complaints are made, and with some degree of plausibility, of the oppressive operation of the regulation in regard to the travelling allowance; that allowance was no doubt often abused; but I doubt the justice of the remedy, as well as the policy of subjecting the whole service to punishment for the offences of a few individuals. I am aware that unless the travelling be restricted the expenditures would exceed any reasonable appropriation; but the remedy is with the Secretary of War and the General commanding the army; they have the power to restrict. The true principle, both as regards the officers and the public, is, that whilst the former should not be required to beggar themselves in the performance of their duties, the latter should pay for no travelling for the personal convenience of any one. No journey should be sanctioned unless the public interest requires that it be performed, and of that the Secretary of War or the General-in-chief would be the proper judge; and, the journey authorized, all indispensable expenses should be paid. Scarcely a case could occur in peace, except on the extreme Western frontier, where a journey, supposed by the local commander to be necessary, might not be delayed until the decision of the General or the Secretary be obtained. This matter is settled by law in the naval service, and navy officers receive double the allowance of army officers when travelling on the same route and in the same conveyance. So long as this discrepancy remains, whether sanctioned by law or regulation, the complaints will not only be frequent, but loud.

The allowance of quarters could not so well be regulated by law; but it is desirable that plain furniture be provided at the public expense for the quarters at the several posts, the officers who have the use of it to be accountable for it, and make good any loss or damage. This would render the service more efficient, by enabling all officers to move promptly when they receive orders, and save them from ruinous losses arising from the sacrifice of their furniture at hasty sales. It would, besides, only put the military on a footing of equality with the naval service.

The allowance of forage is conditional, and depends upon law. It is no more an emolument to the army officer who legally receives it than the repairs of the ship are to the navy officer; but it subjects all who receive it to injurious imputations. I submit whether it would not be better to reduce it, and make it positive, or, if left conditional, as at present, that it be allowed only for horses actually mustered.

With high consideration and respect, I have the honor to be, sir, your obedient servant,

TH. S. JESUP,
Quartermaster General.

Hon. J. M. Porter,
Secretary of War.

No. 3.

REPORT OF THE COMMISSARY GENENAL OF SUBSISTENCE.

Office of the Commissary General of Subsistence,
Washington, October 31, 1843.

Sir: In obedience to your instructions of the 26th ult., I have the honor to submit the annual report and estimates from this department.

The data on which the estimates for the subsistence of the army and for the expenses of this bureau are based are stated in detail on the estimates, and I have only to add that the estimate for subsisting the army is designed to provide for the expenses consequent on ordinary movements of troops.

At the close of the fiscal year ending June 30, 1844, there will be an unexpended balance of about $200,000, applicable to the subsistence of the army for the succeeding year. This balance is attributable to the diminished cost of provisions on the Western frontier, and to the very limited movements of troops involving extraordinary expenses.

The troops have been supplied at all points with an abundance of wholesome provisions, and the accounts of the officers of this department have been promptly rendered.

Most respectfully, your obedient servant,

GEORGE GIBSON, *C. G. S.*

Hon. J. M. Porter,
Secretary of War.

No. 4.

REPORT OF THE PAYMASTER GENERAL.

Paymaster General's Office,
Washington, October 30, 1843.

Sir: I have the honor, herewith, to lay before you the annual report of the state of the Pay department for the fourth quarter of the year 1842, and first, second, and third quarters of the year 1843.

From the tabular statement that accompanies this, it will be seen that the balances in the hands of the present paymasters, on the 1st October, 1842, amounted to $605,762 07, and that subsequent thereto they received from the Treasury and other sources $2,248,284 40, making the total sum to be accounted for $2,854,046 47.. Of this amount, $2,571,426 71 have been expended and accounted for; the balance ($282,619 76) is applicable to the payments that become due within the present quarter, and will, I have no doubt, be fully accounted for before the close of the quarter.

The troops are paid to as late dates as they have ever heretofore been when the annual statements were made out.

It is believed that all the militia claims that could be settled by the Pay department before being audited have been paid, and that no additional funds need be appropriated for that purpose, unless Congress should direct the payment of claims not now provided for by law.

Respectfully, your obedient servant,

N. TOWSON, *P. M. G.*

Hon. J. M. Porter,
Secretary of War.

Statement showing the amount remaining in the hands of each of the disbursing officers of the Pay department, and unaccounted for on the 1st of October, 1842; the amount remitted to each from the Treasury, or turned over by other agents, during the 4th quarter of 1842, and the 1st, 2d, and 3d quarters of 1843; the amounts accounted for by each, by accounts and vouchers, of expenditures, or by evidences of transfers to other agents, or of replacements in the Treasury; and the balance unaccounted for by each, to be applied to payments in the 4th quarter of 1843.

Names of paymasters.	Balance in hand and unaccounted for on the 1st of October, 1842.	Amount remitted from the Treasury and turned over by other agents in 4th qr. of 1842, and 1st, 2d, and 3d qrs. of 1843.	Total received, to be accounted for.	Amount expended in paying regular troops.	Amount expended in paying the military academy.	Amount expended in paying militia and volunteers.	Amount turned over to other agents, or replaced in the Treasury.	Total accounted for.	Balance unaccounted for, to be applied to payments in the 4th quarter of 1843.
B. F. Larned - -	$34,139 65	$131,285 10	$165,424 75	$152,421 99	-	$2,869 70	$950 00	$156,241 69	$9,183 06
T. J. Leslie - -	39,137 52	227,202 72	266,340 24	238,610 45	-	-	1,085 75	239,596 20	26,644 04
D. S. Townsend -	30,364 76	140,548 18	170,912 94	164,573 46	-	-	57 00	164,630 46	6,282 48
D. Randall - -	-	114,775 89	114,775 89	92,606 57	-	-	425 79	93,032 36	21,743 53
C. H. Smith - -	20,854 98	102,557 92	123,412 90	121,524 42	-	157 76	-	121,682 18	1,730 72
T. P. Andrews - -	7,085 94	151,665 70	158,751 64	147,207 62	-	5,271 24	887 74	153,366 60	5,385 04
Edmund Kirby - -	42,100 13	112,644 78	154,744 91	147,493 40	-	-	88 20	147,581 60	7,163 31
A. D. Steuart - -	3,397 96	190,254 49	193,652 45	161,744 64	-	1,583 09	20,104 49	183,432 22	10,220 23
Peter Muhlenberg -	74,180 29	100,073 85	174,254 14	126,994 94	-	34,213 27	11,000 00	172,208 21	2,045 93
Christopher Andrews -	34,645 37	91,710 52	126,355 89	95,024 81	-	19,485 87	5,114 86	119,625 54	6,730 35
E. Van Ness - -	53,028 26	105,207 43	158,235 69	110,375 19	-	45,449 91	-	155,825 10	2,410 59
Benjamin Walker -	78,691 28	294,391 30	373,082 58	211,020 28	-	-	73,222 78	284,243 06	88,839 52
St. Clair Denny -	60,000 00	181,858 63	241,858 63	187,514 24	-	-	7,673 71	195,187 95	46,670 68
Charles Davies - -	66,475 84	168,571 67	235,047 51	79,257 31	$147,407 46	-	-	226,664 77	8,382 74
David Hunter - -	61,660 09	135,536 22	197,196 31	155,448 55	-	-	2,560 22	158,008 77	39,187 54
	605,762 07	2,248,284 40	2,854,046 47	2,191,817 87	147,407 46	109,030 84	123,170 54	2,571,426 71	28[illegible],619 76

N. TOWSON, *P. M. G.*

PAYMASTER GENERAL'S OFFICE, *October* 30, 1843.

No. 5.

REPORT OF THE SURGEON GENERAL.

SURGEON GENERAL'S OFFICE, *October* 31, 1843.

SIR: In obedience to your circular of the 26th of September, I have the honor to lay before you a statement of the fiscal transactions and a report upon the operations generally of the Medical department of the army.

The amount of the appropriation for the medical and hospital department remaining on the 30th of September, 1842—		
In the hands of disbursing agents	$2,999 94	
In the Treasury of the United States	18,240 85	
And the amount appropriated by the act of Congress approved the 1st of March, 1843—		
For the half calendar year ending the 30th of June 1843	9,500 00	
For the fiscal year ending the 30th of June, 1844	25,000 00	
Total	-	$55,740 79
Of this sum, there has been paid at the Treasury—		
On account of the pay and other claims of private physicians	6,047 19	
On account of medical and hospital supplies	1,405 99	
Also, this sum, paid to Boyd Reilly, by order of the Secretary of War, under an act of Congress of 3d March, 1843, for his patent right to a bathing apparatus	2,500 00	
And by disbursing agents, for medical and hospital supplies, meteorological instruments, books, furniture, &c.	17,115 28	
Leaving a balance, on the 30th June, 1843—		
In the hands of disbursing agents	1,421 58	
And in the Treasury of the United States	27,250 80	
Total	-	55,740 79

The medical supplies for the army have been furnished to all the military posts, by the medical purveyor at New York, with the utmost regularity and promptitude, and the articles provided have been of the best quality, and withal were purchased at the lowest possible cost.

Under the present method of supplying medical stores to the army, and the system of responsibility for the expenditure of the same, which was established a number of years ago, and which is now rigidly enforced, the expenses of the department have been brought down to the lowest possible standard compatible with a just liberality on the part of the Government.

During the last four or five years, the average cost of the medical supplies has been about $2 60 per man per year; for the last twelve months, $2 22 per man. Below this amount we cannot go without abridging the sick of some of the necessary comforts; but with this sum we have heretofore provided all the essential articles of medical stores, and we can continue to furnish every comfort and convenience which the officer or the enlisted soldier can reasonably expect or rightfully claim of the Government.

The returns of public property, embracing statements of purchases, expenditures, &c., required from the different military hospitals, were regularly rendered; and as these papers exhibited in detail every article of supply received, and satisfactorily accounted for all expenditures of the same, the accounts of the medical officers have been settled in this office up to the 30th of June, the close of the last fiscal year.

The number of cases of indisposition which have been under treatment in the army during the last twelve months (see report marked A) was 27,734; 26,820 of which occurred within the past year, 914 being cases that remained of the preceding year.

Of the whole number of sick, 26,513 have been restored to duty, 309 have been discharged the service, 18 have deserted, and 160 have died—leaving, on the 30th of September, 726 still on the sick report.

The mean strength of the army for the last twelve months has been about 9,863; and, as the number of sick during the same period was 27,734, and the aggregate of deaths was 160, it will appear that the proportion of cases of indisposition to the number of men in service was as $2\frac{81}{100}$ to 1, or 281 per cent.; the ratio of deaths to the number of men as 1 to $61\frac{5}{8}$, or a fraction less than $1\frac{2}{3}$ per cent.; and the proportion of deaths to the number of cases treated, as 1 to $173\frac{27}{100}$, or $\frac{57}{100}$ per cent.

A medical board, for the examination of assistant surgeons for promotion, and of applicants for appointment to the medical staff of the army, was convened in the city of New York on the 1st of July last.

Before this board, one assistant surgeon presented himself for examination, and, having been found qualified, he was recommended for promotion.

From among the applicants for appointment, twenty-four were invited to the examination, fourteen of whom only reported to the board, ten having declined, or failed to present themselves for examination. Of those who reported to the board, three afterwards withdrew without an examination, one was objected to on account of physical disqualifications, and ten were examined; and of these last, four were approved and recommended for appointment.

In conformity with the will of Congress, expressed and implied, an additional number of barometers have been purchased and placed at the prominent positions in our country, and the medical officers have been required to give all the attention to meteorology practicable, compatible with their duty to the sick and other higher obligations to the Government; so that, in addition to the thermometrical and other meteorological observations which have been heretofore received from the different military posts, we shall be able to report barometrical observations also from most of the important stations in the United States. From the report and accompanying charts of Mr. Espy, the meteorologist, herewith presented, (B,) it will be seen that he has been zealously engaged in prosecuting his investigations into the various phenomena accompanying storms, with the view of demonstrating the laws by which the whole are governed.

From data derived from observations taken in every section of the United States, Mr. Espy has, with very great labor, framed these maps, exhibiting to the eye, as he says, "the progress of storms through the United States from west to east, accompanied always with a depression of the barometer, and strong winds on each side blowing towards the line of least pressure," &c.

Charts like these he contemplates preparing quarterly throughout the year, should Congress deem it expedient to sanction the proceeding; and, as the work assigned him will not be complete, nor the result of his obserrations and investigations so clearly and satisfactorily illustrated without hese exhibits of barometrical curves, &c., I respectfully recommend the projét to the favorable consideration of those whose province it is to foster the undertaking.

I deem it to be my duty to call the attention of the Department of War and of Congress to the fact, that, at many of the forts on the seaboard, no proper buildings have been erected for the accommodation of the sick of the garrison. As a general rule, in the absence of all accommodations outside of the walls, some of the casemates of the fort are allotted to the purposes of a hospital, where, in addition to the want of privacy and deficiency of ventilation and of light, the sick are constantly annoyed by the tramping of the other men, and the clangor of their arms within the area of the fort, and frequently shocked by the thunder of the cannon and the rattling of the battlements over their heads.

In further illustration of my views on this subject, I beg leave to give here a transcript of my report, made on a late occasion, touching the propriety and the necessity of having distinct buildings for hospitals erected near our permanent fortifications:

"Whether the Engineer department estimates for funds with which to construct buildings for hospitals, or Congress, in their appropriations for fortifications, contemplate the erection of suitable permanent hospital establishments, I know not; but whatever may have been the practice or the opinions heretofore prevailing on this subject, it is a matter, in my humble judgment, deserving of the serious consideration of the Department of War. I hold that an appropriation of money for the building of fixed fortifications, or a permanent military work, provides not only for the construction of the walls of the fort and the batteries, but also for the erection of barracks, hospitals, and other indispensable accommodations for the men, sick and well, who are to occupy the post and serve the batteries.

"A military work without barracks, hospital, storehouses, &c., is incomplete. A fortification without these essential appurtenances is a mere battery—a work of inferior character, it seems to me, to those contemplated generally in the appropriation acts of Congress.

"As the officers of engineers are the persons who plan and superintend the construction of our permanent fortifications, they understand best the several points of offence and defence, and can better adapt the accommodations for the men to the size and figure of the work than any other agents of the Government. And as under a general contract for erecting a fortress, embracing barracks, hospitals, and other appurtenances, as well as the fortifications proper, better terms can be obtained than by a special agreement *afterwards* for the construction of the necessary accommodations for the officers and men, there cannot be a doubt as to the propriety of having the whole work done according to one original design, and under the control of one and the same department.

"The present seems to be an opportune time for me to give an expression of an opinion, also, touching another matter involving the health and efficiency of the men who are to garrison our fortifications. It is a question, and one which has never been satisfactorily decided, whether the casemates of a fort can be, with propriety, assigned exclusively as the quarters, &c., for the officers and men who are to occupy the work in time of peace.

"As a professional man, I have no hesitation in saying that, *in general*,

casemated rooms cannot be occupied as quarters with the same
health and comfort, that distinct buildings within the area of
outside the work, can afford.

"Were it possible to construct casemates so that they could b
and preserved also in a uniform temperature, military propriety,
economy, would seem to require that so much space within
should not remain unappropriated. But, as our experience p
casemated rooms are invariably damp, and with a temperature
different, in summer and in winter, from the external atmosphe
be conceded that they are not, on the score of humanity or o
even, (having reference to the sickness and permanent invalid
men,) suitable quarters for troops.

"Casemates, like the batteries of a fort, are intended for the p
war. They will give shelter and protection to the temporarily
force of the garrison during the presence of an enemy; and men, u
circumstances, will readily submit to the necessities of the case.
time of need, however, I think it will be good policy to let the
remain bare walls, for the protection from the weather of spare c
other implements of war, reserving the money, that would otherw
pended in fitting up these places as quarters, for the erection
buildings for the accommodation of the officers and men who are
the fort."

The objection to having barracks, hospitals, &c., erected outsid
of our forts is, as I understand, that they destroy the military app
the place, and, by masking the rear battery, interfere with the fi
guns on the line of defence.

This may be a valid objection with the scientific engineer, wh
ble pride it must be to display the fortress which he has erecte
strength and grandeur of appearance. I, however, whose provi
suggest measures conservative of health in the army, and whose
too, to advocate the cause of the sick and invalided soldier,
brought to subscribe to the wisdom of a policy which would with
the officers and men who are to occupy these forts the ordinary
and abridge them of the accommodations essential to their heal
the supposition that some time or other, perhaps in the hundredth
work may be attacked, and the use of all the guns required, unen
with a hospital or other buildings outside of the fortification.
hospitals, &c., distinct from the walls of the fort, (and which can b
as little expense, I apprehend, as fitting up casemates for quarters,)
accommodation and comfort to the garrison for forty or fifty ye
should, eventually, one or two of our many works of defence be
or stormed by an enemy, why, the buildings that mask the guns o
the assailants may be readily burnt down, or battered down by o
cannon.

All of which is respectfully submitted.

TH. LAWSON,
Surgeon Gen

HON. J. M. PORTER,
Secretary of War

B.

WASHINGTON CITY, *October* 9, 1843.

SIR: The object of the "report" which it is my duty to make annually on meteorology will be understood by the following "circular to the friends of science:"

"TO THE FRIENDS OF SCIENCE.

"Last summer I announced to my correspondents, and the public generally, that a 'form for keeping meteorological journals' would be prepared and sent to all those in the United States, Bermuda, West Indies, Azores, and the Canadas, who should signify a willingness to co-operate with me in my endeavors to find out all the *phases* of storms which occur within the range of the widespread simultaneous observations about to be established.

"I have to announce now that the 'form' is completed,* and arrangements are made to strike off a sufficient number to supply all who shall express a wish to aid in this most important undertaking. It is my intention to lay down, on skeleton maps of the United States, by appropriate symbols, all the most important phases of the great storms which come within the range of our simultaneous observations; and thus it is hoped that we will be able to determine the *shape* and *size* of all storms, whether they are *round* or *oblong;* and if oblong, whether they move *side foremost* or *end foremost*, or *obliquely;* and their *velocity* of motion and the *direction* which they take in all the different seasons of the year; the *course* that the wind blows in and beyond the borders of the storm; the *fluctuation* of the barometer and *change* of temperature which generally accompany storms, and the *extent* to which their influence is felt beyond their borders.

"Now, as many of these particulars can be observed as well without meteorological instruments as with them, it is manifest that all who will send me a faithful account of the winds and weather will essentially contribute to the great end in view. Editors of papers, too, who notice great storms, may be of much service, by mentioning the time of greatest violence, and the direction of the wind and time of change, and sending a paper containing the account to the *Surgeon General's office, Washington city*, with the word 'meteorology' marked on the corner of the envelope. All papers and journals thus directed will come to my hands, as I am now attached to that bureau; and, after being carefully collated with each other, will be deposited in the archives of that office, to aid the future meteorologist in developing laws which the present state of the science may not enable us to detect. Let none think their *mite* too insignificant to be thrown into this common treasury.

"I am authorized by the Secretary of State to request all our ministers, consuls, and other diplomatic and commercial agents of the United States in foreign countries, to whom the 'form' is sent, to transmit to the *Department of State* the journals which they may keep or procure from others, that they may be immediately placed in my hands.

"All masters of vessels sailing in the Atlantic, or Gulf of Mexico, are requested to send a copy of their 'logs' to the *Surgeon General's office*, immediately on their landing at any port in the United States.

"If the chain of simultaneous observations could thus be kept unbroken entirely across the Atlantic, the value of the whole system would be much increased.

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* It is the "form" prepared under the direction of the Surgeon General for the military posts.

"Journals, according to the adopted plan, will be kept at all the military stations of the United States; and the Secretary of the Navy has given orders for the same to be done at the naval stations and in ships of war on our coast. Forms also will be sent to all the light-houses and floating lights, and many of them will at least keep journals of the wind and weather. Governor Reid, of Bermuda, has promised to send me journals from that island, and I have the promise of various journals from Canada, Newfoundland, and Nova Scotia.

"There are many of the colleges of the United States from whom I have not yet had such promise; but I now appeal to them *all*, with confidence, to unite in their efforts to perfect this most interesting science.

"There are one hundred and three colleges in these United States, and very many high schools; and, as it is known that barometric fluctuations accompany storms, it is manifest that the direction in which storms move, and their velocity, may be ascertained by observations made on the barometer alone at these various institutions.

"The number of observations cannot be too great.

"JAMES P. ESPY.

"SURGEON GENERAL'S OFFICE,
Washington, December 6, 1842."

The above "circular" was sent last winter to many hundred persons in various parts of the world, and I have now (May 29, 1843) the pleasure of informing the "friends of science" that more than fifty observers, who note the barometer, and more than sixty others who have no barometers, have commenced sending in their journals. From the certainty of success, it is *now* hoped that others, who feel disposed to aid in this great undertaking, will commence their observations immediately.

It is my duty to collate all the journals, and report annually "to the Secretary of War." A copy of these reports shall be sent to each of my regular correspondents as soon as they are published by Government.

More observers are much wanted, especially along the Allegany mountains, on both sides; in the northern parts of Vermont, New Hampshire, and Maine; in the "far West," Northwest, and North, and in the ocean between this and Europe.

I take this opportunity of requesting all my correspondents to visit the path of any tornado within their reach, and let me know the following particulars: The *width* and *direction* of the path; the *direction* in which the trees are thrown down on the *two sides*, and also in the *middle*; whether the trees are thrown inwards *equally* on both sides, or more backwards on one side than on the other. If any are thrown across each other, mention on which side of the path, and the direction in which both the *upper* and *under* trees are lying; whether the *line* to which the trees converge on both sides, if they do converge, is in the *centre* of the path, or *nearer* to one side than the other.

These questions apply only to a tornado where it passes through a forest of equal density on both sides of the path, for elsewhere both borders will not be well defined.

In case any one has a salt marsh or prairie which he wishes to burn, or a large mass of timber from a clearing of land, preserve these combustibles till the time of a drought, if one should occur: then choose a very calm and clear day, and at about eight o'clock in the morning take a tumbler of cold water, in the open air in the shade, and with a thermometer find the *highest* temperature of the water when it is just cold enough to cause the moisture in the air to condense on the tumbler. This highest temperature is called the dew-point. If this should not be more than six or eight degrees (the less the better) below the temperature of the air, every thing is then favorable at the surface of the earth for the production of rain. Set fire to your combustibles at many places in the circumference at once. Immediately an up-moving column of air will be produced; and if it is not bent out of a perpendicular motion, by an upper current of air, it will begin to form clouds when its top reaches as many hundred yards high as the dew-point is below the temperature of the air in degrees of Fahrenheit. *Watch the subsequent phenomena, and describe them to me.*

If it rains, it will not extend much to the west; but it is *probable* that it will widen out from the place of beginning, and become a general rain to the east.

If it should not rain, it will be prevented by one of two causes: an *upper current* of air, sweeping the up-moving column out of the perpendicular; or an *upper stratum* too warm and light to let the up-moving column swim in it.

Other instructions will be given, if requested, before the middle of July.

JAMES P. ESPY.

To carry out the plan proposed in the circular, skeleton maps of the territory embracing the observations were procured; and on these maps are laid down the observations taken by the various observers at three o'clock, P. M., of each day, unless another hour is specially mentioned.

The direction of the arrows shows the direction of the wind, and the length shows its force. An arrow half an inch long represents a gentle breeze, and one an inch and a half a very violent wind; and so in proportion. The points of the arrows are near the places of observation. The numbers in red ink represent the quantity of water fallen, whether of rain or snow, in hundredths of an inch. *S* means snow, and *R* means rain. A large *S* means a great snow, and a small *s* means a little show; and so of rain.

The long black lines represent the various maxima of pressure of the atmosphere, as indicated by the barometer; and the long red lines represent the various minima of pressure. The figures attached to these lines represent the amount of change in the barometer since the preceding fluctuation at the place where the figures stand.

The numbers which stand by themselves in black ink, with the sign + or — after them, represent the various fluctuations of the thermometer at its highest and lowest temperatures. When *max.* is subjoined, it means the highest temperature of the month; and when *min.* is subjoined, it means the lowest temperature of the month. These numbers are affixed to several localities in the extreme north, south, east, and west, and middle of our territory, with a view to ascertain whether any general law, regulating the sudden fluctuations of temperature, could be deduced from the observations.

The great irregularities which attend these fluctuations seem to forbid any attempt *at present* to lay down general laws on the subject. The time of observations is too short. During the three months which have been examined on this point, the highest elevations of the thermometer sometimes take place in the east, at the same that the lowest take place in the west; and *vice versâ*. The same may be said of the north and the south. Nay, even the maximum and minimum of the month sometimes occur on the same day at different places. (See charts, 25th of January and 14th of February.) If there is any thing at all approaching regularity on this point, it is that the thermometer has a tendency to rise on the eastern side of storms, and sink on the western side; but this is by no means universal. It would be expected that northerly winds would always reduce the temperature; but even this is not a universal law. Instances are not wanting of a rise of temperature with a northerly wind, and of a fall of temperature with a southerly wind. That these apparent anomalies are effected by the influence of the vicinity of storms, there can be little doubt; and if so, patient investigation will eliminate the cause.

Other phases of storms are less anomalous, and, from a careful examination of the meteorological charts, the reader will be able to deduce the following generalizations:

1st. The rain and snow storms, and even the moderate rains and snows, travel from the west towards the east, in the United States, during the months of January, February, and March, which are the only ones yet investigated.

2d. The storms are accompanied with a depression of the barometer near the central line of the storm.

3d. This central line of minimum pressure is generally of great length from north to south, and moves side foremost towards the east.

4th. This line is sometimes nearly straight, but generally curved, and most frequently with its convex side towards the east.

5th. The velocity of this line is such that it travels from the Mississippi to the Connecticut river in about twenty-four hours, and from the Connecticut to St. John, Newfoundland, in nearly the same time, or about thirty-six miles an hour.

6th. When the barometer falls suddenly in the western part of New England, it rises at the same time in the valley of the Mississippi, and also at St. John, Newfoundland.

7th. In great storms, the wind, for several hundred miles, on both sides of the line of minimum pressure, blows towards that line, directly or obliquely.

8th. The force of the wind is in proportion to the suddenness and greatness of the barometric depression.

9th. In all great and sudden depressions of the barometer, there is much rain or snow; and in all sudden great rains or snows, there is a great fluctuation of the barometer.

10th. Many storms are of great and unknown length from the north to the south, reaching beyond our observers on the Gulf of Mexico and on the Northern lakes, while their east and west diameter is comparatively small. The storms therefore move side foremost.

11th. Most storms commence in the "far west," beyond our most western observers; but some commence in the United States.

12th. When a storm commences in the United States, the line of minimum pressure does not come from the "far west," but commences with the storm, and travels with it towards the east.

13th. There is generally a lull of wind at the line of minimum pressure, and sometimes a calm.

14th. When the wind changes to the west, the barometer generally begins to rise.

15th. There is generally but little wind near the line of maximum pressure, and on each side of that line the winds are irregular, but tend outwards from that line.

16th. The fluctuations of the barometer are generally greater in the northern than in the southern parts of the United States.

17th. The fluctuations of the barometer are generally greater in the eastern than in the western parts of the United States.

18th. In the northern parts of the United States the wind, in great storms, generally sets in from the north of east, and terminates from the north of west.

19th. In the southern parts of the United States the wind generally sets in from the south of east, and terminates from the south of west.

20th. During the passage of storms, the wind generally changes from the eastward to the westward by the south, especially in the southern parts of the United States.

How far these generalizations will apply to other months of the same year, or even to the same months of different years, remains to be seen by future investigations. Whatever may be the result, the facts which will be collected and imbodied cannot fail to be of the highest interest and utility, especially if they shall be found to unite in one grand theory, which explains all the phenomena.

It would add much, however, to the interest, and probably to the utility of the system of investigation now adopted, if simultaneous observations were obtained over a much wider field.

It is highly desirable to *surround* storms, and keep them constantly in view, from their beginning to their end. Now, as the barometer generally sinks more during the passage of our great winter storms in the northern parts of the United States than in the southern, is it not probable that the northern half of many of these storms is entirely beyond the bounds of our observations? And, as these storms certainly reach Newfoundland in their progress towards the east, is it not probable that they do not break up before they advance far into the ocean? May not some of them even reach the shores of Europe? Under these circumstances, would not the Governments of England and France, if they were requested by the proper authorities, order the masters of the numerous steamers which now ply the Atlantic to send copies of their journals to Washington city, to be collated with those received now from so many other quarters?

What high utilities to the mariner, and through the mariner to all mankind, might not reasonably be anticipated, from such a system of widespread simultaneous observations, continued long enough to compare with each other, not merely the storms of different seasons, but the storms of different years!

All which is respectfully submitted.

JAMES P. ESPY.

No. 6

REPORT OF THE CHIEF ENGINEER.

Engineer Department,
Washington, November 2, 1843.

Sir: In compliance with your orders, I have the honor to submit my report on the several operations in progress during the year, under the direction of this office, together with estimates for the fiscal year ending June 30, 1845.

MILITARY DEFENCES.

As stated in my reports of two or three preceding years, the leading objects of this department have been to advance, as fast as possible, the new system of defences, maintaining at the same time its finished portions in the best condition for service; and also to avail, to the utmost, of the strength afforded by remaining works of the old system. Within the present year I have made a personal inspection of every fortification in course of repair or construction under this office, excepting only one at Detroit, and five on the Southern coast; and it is very gratifying to be able to state, that I have every where found the officers and agents applying themselves with the utmost diligence and zeal to the prosecution of those objects. An examination into the systems of accounts, with the mode of transacting the current business of hiring, bargaining, and purchasing; of supervising, directing, and disposing of labor; and into the quality of material and workmanship, has fully satisfied me that all are animated by one common feeling of devotion to the public interest, applying both their time and faculties in the most advantageous manner. The results of their labors are very evident, in the material progress within the year of all the works in hand.

The bringing to a close some of the larger and more expensive works of the new system of defence leads naturally to the commencement of other members of the system which have been unavoidably delayed. Of these, some of the most urgent necessity were brought to the notice of the Government last year, and not then for the first time; and, though pressed upon the attention of Congress by the Executive, and favorably noticed by the Military Committee of the House, were not acted upon. In again presenting these, (in their geographical position, in the following description, and in a separate estimate,) for the sanction of the Government, I beg leave to repeat a remark or two heretofore made on the effect of the rate of appropriation upon the cost of public works.

First. Economy of construction requires that the annual grants be as large as can be advantageously applied; the expenses of management and supervision being nearly the same, whether the expenditure be larger or smaller, and there being a considerable expenditure, every year, in adapting the work to the season. So far as the expenses called "contingent" are concerned, the same work may be erected for half the money in a given number of years, that would be necessary were the labors spun out to twice that period.

Secondly. The rate of appropriation should, for the same work, be as nearly uniform as may be; because, after operations are once organized, any change will involve more or less loss; and if the change be sudden and considerable, this loss can hardly fail to be of some magnitude.

I also beg leave to repeat a remark on another point essential to the most advantageous application of moneys granted by Congress for fortifications. Transfers from one item of appropriation for fortification to another, have been made, under existing laws, by former Presidents of the United States; but they have also, by others, been declined, under the same laws, as of doubtful legality. As important results are sometimes dependent on the exercise of this power, it is very desirable to obtain a clear expression of the intention of Congress, by a declaratory act, or in some other way.

Defensive works near Detroit, Michigan.—The commencement of this work was delayed to secure possession of a very important enlargement of its site—being part of a large tract confirmed by Congress (March 3, 1843) to the heirs of Todd and McGill, on condition that this portion should be ceded for a just equivalent to the United States.

Every step dictated by the law was taken by the United States, under advisement with the Attorney General, but the claimants protested against the proceeding and the appraisement. After unavailing delay, the engineer officer, under direction of the War Department, has taken possession of the land, laid out the fort, and commenced operations on a small scale. A wharf has been built, 50 feet square, of timber filled in with stone, and connected with the shore by a bridge. The sum of $50,000 was appropriated for the work in 1841: of this, $5,813 96 had been expended on the 30th September last, and $3,662 75 stands pledged to cover the amount appraised for the land above mentioned. The balance undrawn from the Treasury on the 1st of January next will revert thereto at that time. Its reappropriation early in the session is very desirable.

Balance in the Treasury on the 30th September, 1843 -	$39,245 00
To be drawn from the Treasury in the 4th quarter of 1843, to be ready to meet the amount of the appraisement, and for other purposes - - - - - - - -	11,000 00
Probable amount liable to revert, and estimated to be reappropriated for the half year ending December 31, 1844 -	28,245 00
Estimate of the additional amount required to be appropriated for the half year ending December 31, 1844 - -	20,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - - -	20,000 00

Defensive works at Buffalo.—A commencement was made early in the past summer of a battery and defensive tower on a commanding point between Buffalo and Black Rock.

The excavation for the tower and surrounding ditch has been finished, with the exception of a strip left for a roadway. About one-half of the earthen counterscarp has been sodded; nearly all the foundation of the breast-height wall of the covered way has been laid; the terreplein of the covered way raised to its proper height, and the glacis nearly formed; the principal drain has been finished; the foundations of the tower and the cisterns connected therewith finished. The principal items of work are—13,438 cubic yards of excavation, 13,356 of embankment, 284 of concrete, 787 cubic yards of rubble masonry, and 1,023 square yards of sodding, The sum of $50,000 was appropriated for this work in September, 1841. The balance undrawn January 1, 1844, will revert to the Treasury, and its reappropriation at an early day is urgently requested.

Balance in the Treasury on the 30th September, 1843 -	$23,500 00
To be drawn from the Treasury in the 4th quarter of 1843 -	10,000 00
Probable amount liable to revert, and estimated to be reappropriated for the half year ending December 31, 1844 -	13,500 00
Estimate of the additional amount required to be appropriated for the half year ending December 31, 1844 -	6,500 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - -	15,000 00

Fort Niagara, New York.—This fort is now nearly finished—quite so as to all expensive operations—and is in a very good condition as regards defence. The principal labors of the year have comprised a reconstruction of the face of the lake wall, which was in a dilapidated state, and surmounting it with a line of palisades; regulating and sodding the river bank in face of the fort; and finishing the repairs of the magazine and of the two interior stone block-houses. The latter were designed as defensive works merely, but the repairs have been applied in a way to make them, in case of necessity, available for accommodation to the garrison, at the same time that the defensive properties have been materially improved. The magazine is quite large, and has been put in perfect condition. A furnace for hot shot has been erected.

The repair or reconstruction of barracks, quarters, and storehouses, within the fort, is very necessary, but it is supposed to belong to another department.

Certain works constructed upon the shore, to arrest the abrading action of the current, have been very successful; and, so far as regards the actual site of the fort, the means at command are deemed adequate to execute the further work required for this, as it is for other objects. The engineer officer in charge reports, however, that the river is acting upon the shore above the work in a way to threaten serious injury, and we may, some time hence, have to call for the means of preventing it.

There is no balance in the Treasury to the credit of this work.

No further appropriation is now asked.

Fort Ontario, Oswego, New York.—On the 30th September last, this fort, with its outworks, was essentially finished, and in a good state of defence. A company of infantry has been quartered in the barracks since January last. The operations of the year have been principally as follows: More than one-half the counterscarp of the main work has been revetted with kyanized wood; the breast-height of the covered way has been revetted with timber, and three traverses erected on the terreplein of one of its fronts; a traverse has also been erected, covering the sortie passage through the place of arms in front of the postern; a good deal of sodding has been executed; 12 gun platforms have been laid in the fort, and one at the salient of the demilune. Some slight improvements are necessary, to render the work complete; the ditch should be better drained, and some of the exterior embankments adjusted. The soldiers' barrack is finished, and a building has been erected for officers' quarters, and another to furnish store room, offices, guard room, and prison. A strong sea wall, 201 feet in length, has been constructed during the year, at the bottom of the more exposed part of the bank. Another building for officers' quarters is found to be necessary, to provide fully for the garrison; and a further extension of the sea wall is believed to be important to the preservation of the parts of the shore still exposed. For these purposes, the further sums stated below are requisite, on the estimates of the officer in charge, there being nothing now in the Treasury.

Estimate of the amount required to be appropriated for the half year ending December 31, 1844 - - -	$7,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - -	7,000 00

Fortifications at the outlet of Lake Champlain.—The United States having reacquired, by treaty with Great Britain, possession of Rouse's point, it is proposed to erect a fort on that position, in lieu of the two forts formerly contemplated for points further south, and for which projects had been carefully prepared. This change of position necessarily involved a new study of the subject, and active operations have been unavoidably delayed until the board of engineers could complete their plans and estimates, which will soon be done.

The sum of $75,000 was appropriated for this object in 1841, of which a large proportion will revert to the Treasury on the 1st of January next, unless, as is urgently requested, it be reappropriated at an early day.

Balance in the Treasury on the 30th September, 1843 -	$73,373 44
To be drawn from the Treasury in the 4th quarter of 1843, on the estimate of the officer in charge - - -	15,065 34
Probable amount liable to revert, and estimated to be reappropriated for the half year ending December 31, 1844 -	58,308 10
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - -	25,000 00

Fort at the Narrows of the Penobscot, Maine.—Congress, at its last session, diverted an appropriation of $25,000 that had been formerly made for defensive works, barracks, &c., for a projected depot at the junction of the Mattawamkeag and Penobscot, to the purchase of a site and commencement of defensive works at or near the Narrows of the Penobscot; and as soon as an officer could be spared for the purpose, one was sent to this last-named spot, with the necessary instructions in reference to the purchase of a site. This negotiation is well advanced; and it is expected that, during the winter, a purchase on reasonable terms will be made of all the land actually necessary. If so, a commencement may be made of the projected works early in the ensuing summer.

Balance in the Treasury on the 30th of September, 1843 -	$25,000 00
To be drawn from the Treasury in the 4th quarter of 1843 -	7,000 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - -	15,000 00

No additional appropriation is asked at present.

Fort Preble, Portland harbor, Maine.—The two powder magazines have been rendered bomb-proof by considerable additions to the masonry of the walls and roofs; they have been supplied with electrical conductors and the means of a more perfect ventilation. The pintle and traverse arrangements have been established for mounting barbette guns to defend the land approaches; and more room has been given to the terreplein near each of these guns. The drainage generally has been improved.

The appropriation for this work is very nearly exhausted. It is proposed to give next year the requisite increase to the stability of the pintle blocks established in 1841, by means of the appropriation for incidental expenses attending repairs of fortifications. This old fort will then be in good repair throughout, and possess all the efficiency that can be given to it.

Balance in the Treasury on the 30th September, 1843 - -	$83 89
To be drawn from the Treasury in the 4th quarter of 1843 -	83 89

No further appropriation is asked.

Fort Scammel, Portland harbor, Maine.—The repairs of this work recommenced in June last. Improvements were made to the powder magazine, similar to those detailed in the report of Fort Preble; slight extensions of the rampart walls along the gorge, and other arrangements in each of the circular wings, were made for improving the command of the battery over the eastern part of the harbor; extensive repairs were made of the wooden block-house, and complete arrangement of its interior, including the construction of a small powder magazine. Considerable progress was also made in repairing and extending the old battery, commanding the eastern channels of the harbor.

It is designed to complete the block-house this year, in order that it may be availed of as an extension of barrack room for the troops in the harbor. It was erected as a defensive work merely, but the repairs have had reference to the matter of accommodation also, and in that respect it will now be found a convenience to the garrison.

The appropriation for this work being very nearly exhausted, it is proposed to finish the repairs commenced from the appropriation for incidental expenses attending repairs of fortifications; and, accordingly, no further grant is now asked.

Balance in the Treasury on the 30th September, 1843 - -	$80 19
To be drawn from the Treasury in the 4th quarter of 1843 -	80 19

Fort McClary, Portsmouth, New Hampshire.—The sum of $5,000 was appropriated for this work in August, 1842. The officer in charge of these repairs, having also charge of Forts Preble, Scammel, and Constitution, has not yet been able to commence operations at Fort McClary. The work will be commenced at the expiration of the coming winter, and will embrace additions to the walls and roof of the magazine, to render the same bomb-proof; the construction of a wooden block-house, and of two small brick buildings for flank defence; additions in height to the parapet embankment of the upper battery, and other minor operations.

Balance in the Treasury on the 30th September, 1843 -	$4,845 12
To be drawn from the Treasury in the 4th quarter of 1843 -	2,000 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - - -	2,845 12

No further appropriation is asked at present.

Fort Constitution, Portsmouth, New Hampshire.—The repairs of this fort, which were recommenced in August—the earliest day at which an officer could be assigned to them—have been confined to the following objects: improving the powder magazines in the manner detailed in the report of Fort Preble; adjusting the breast-height wall at the southwest salient and near the northeast shoulder, and preparing to place a gun at each point, for flank defence; preparing, also, to establish four guns on the land front, to defend land approaches. The guard-house has been slightly repaired.

The funds still available for this work will be applied this fall and the coming spring to repairing the wooden platform along the south front, laying a stone coping on the parade wall, renewing some decayed gates, increasing the stability of the pintle centres established in the fall of 1841, and various other slight repairs.

Balance in the Treasury on the 30th September, 1843 -	$3,000 00
To be drawn from the Treasury in the 4th quarter of 1843 -	2,000 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - - -	1,000 00

No further appropriation is now asked.

Sea wall of Deer island, Boston harbor, Massachusetts.—Certain portions of these walls, which had been partially injured by severe storms, have been repaired, and breakwaters constructed, to ensure future protection. The pavement also has been repaired.

A balance of $400 remains in the agent's hands, applicable to future repairs.

No further appropriation is now asked.

Sea wall of Rainsford island, Boston harbor.—This work is now complete and in good condition throughout.

Breakwaters have been constructed near the extremities, and the wall at both ends raised to the height of the intermediate portions; the embankment and pavement in rear of the wall have been repaired.

No further repairs being necessary at present, no further appropriation is asked.

Protection of Lovell's island, Boston harbor, Massachusetts.—The masonry of the sea wall was commenced in the last of July, and completed on the 11th of October. The embankment in rear of the wall is also completed. A top pavement, which is carried back 25 feet from the face of the wall, is probably done by this time. This wall is 806 feet in length, from 13 to 14 feet high, and about six feet thick. It is of the most substantial character; the average weight of the stones, consisting of stretchers about 8 feet long, dovetailing with headers from 4 to 5 feet long, is not less than two tons, all laid in cement mortar. The facing stone is backed with concrete, composed of gravel and cement mortar.

Balance in the Treasury on the 30th September, 1843 -	$5,500 00
To be drawn from the Treasury in the 4th quarter of 1843 -	4,000 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - - -	1,500 00

To complete this wall and its appurtenances, no further appropriation is asked.

West Head battery and Southeast battery, Governor's island, Boston harbor, Massachusetts.—These batteries remain in the same condition as at my last report—there being needed to put them in an efficient state only some trifling operations, that can be soon executed whenever necessary. It is, however, deemed by the board of engineers, with whom I fully concur, to be important to the system of defence in this harbor to bring the whole of the island on which these small batteries stand within the system, as affording positions secondary in importance only to those occupied by Forts Warren and Independence. To this end, it becomes necessary to purchase the portion now belonging to individuals, with whom negotiations have been opened, and from whom offers, deemed to be reasonable, have been received. In view of this result, the department has abstained from expending more money on the small works named, deeming it a better disposition of the unexpended balance to apply it toward the purchase of the island. At the present time, an appropriation of $3,000 will suffice, with the balance remaining of the appropriations for the batteries, to secure this most desirable object; and such appropriation is accordingly earnestly solicited. The balance mentioned has, however, been held until it is about to revert, and should therefore be reappropriated at an early day toward the purchase of the site.

Balance in the Treasury on the 30th September, 1843 -	$7,292 78
Amount liable to revert, and estimated to be reappropriated toward the purchase of the site, for the half year ending December 31, 1844 - - - - - -	7,292 78
Estimate of the additional amount required to be appropriated for the purchase of the site for the half year ending December 31, 1844 - - - - - -	3,000 00

No appropriation is asked for the half year ending June 30, 1845.

Fort Independence, Boston harbor, Massachusetts.—This work is rapidly approaching completion. The scarp of curtain No. 5, except a small gap for the postern gate, has been finished, thereby completing the enclosure of the work; the casemate and postern arches of this section have been turned and roofed in concrete; the parade wall of the same front has been completed; the carronade traverse circles, 18 in number, have been laid in all the flanks save one; one platform has been laid on curtain No. 2, completing the platforms for casemate guns; the concrete floorings of the curtain and left flank of No. 2, of the right of No. 3, and of the galleries connecting therewith, have been laid; four gun embrasures have been completed on curtain No. 2; the terrepleins of the main work, except on curtain No. 5, have been embanked; the parapets of three faces and one entire front have been embanked, and the exterior slopes sodded; on fronts 2, 3, and 4, the exterior ground has been nearly all graded; it is proposed to complete this operation on all the fronts this season. More than 2,400 cubic yards of granite have been laid during the year, in the sea wall for the preservation of the site. This work is well advanced.

Balance in the Treasury on the 30th September, 1843 -	$62,016 91
To be drawn from the Treasury in the 4th quarter of 1843	13,000 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - - -	30,000 00
No appropriation required for the half year ending December 31, 1844.	
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - -	15,000 00

Fort Warren, Boston harbor, Massachusetts.—Most important progress has been made since the last report, in operations upon this work, and in a way to add materially to the present security of the harbor. Excepting a small opening at the gateway, the exterior wall is finished, and extensive preparations have been made for the immediate mounting, if necessary, of many guns.

The quantity of masonry laid during the year amounts to 6,022.50 cubic yards; sodding, 2,176 square yards; asphaltic casemate roofing, 354 square yards.

On front No. 1.—The old sea wall has been improved for a length of about 275 running feet, by laying thereon two additional courses of heavy granite blocks, substituting rubble and gravel for the earth in rear, and renewing the pavements; 110 running feet of the parade wall raised to the height of about 11 feet; the breast-height wall completed; its parapet embanked and sodded; glacis embanked; ditch graded; earth work of the whole exterior front completed.

On front No. 2.—One hundred and sixty running feet of the parade wall completed; terreplein of the coverface graded, and the platforms laid for the battery of this outwork, now ready for its full armament of forty-six guns.

On front No. 3.—Scarp wall completed, except 21 feet in the curtain near the intended gateway; all but two of the piers of the curtain completed; and the foundation of the parade wall commenced.

On front No. 4.—Inclined gallery built, leading from the parade grounds to the casemate of the left flank; ditch graded; parapets of the curtain, left flank, and left face, embanked and sodded.

On front No. 5.—The arches of the flank casemates have been turned, and the galleries communicating therewith constructed; the parapets of the right face, right flank, and a portion of the curtain, have been embanked; and the excavation of the ditch completed.

There are now upon the work, ready to be laid, 129 sets of traverse circles and 92 sets of pintle stones, for pieces in barbette; for which the terrepleins of fronts Nos. 4 and 5 are prepared.

The operations contemplated next year are the completion of the parade wall on portions of fronts Nos. 1, 2, and 5; turning and capping with concrete 15 casemate arches on front No. 3; and the construction of the sea wall and parapet in front of the ravelin on No. 5.

Balance in the Treasury on the 30th September, 1843 -	$60,285 75
To be drawn from the Treasury in the 4th quarter of 1843 -	17,000 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - -	31,000 00
No appropriation required for the half year ending December 31, 1844.	
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - -	30,000 00

Old fort in New Bedford harbor, Massachusetts.—This work is in the same condition as was exhibited in my last annual report. I hoped to have been able ere this to ask the sanction of the Government to a project of a new work of defence for this very important and exposed harbor; it has not been possible, however, for the board of engineers to take up the subject, or for me to spare an officer for that duty. It will be attended to at as early a day as practicable, but until a project is duly prepared and sanctioned, no appropriation will be necessary.

Fort Adams, Newport harbor, Rhode Island.—This work, although in an efficient and defensible state, and for some time occupied by a garrison, is not yet finished as regards several smaller matters essential to convenience, accommodation, preservation, and greater security. Many of these have been for the greater part disposed of during the past season—such as paving casemates and terrepleins, pointing, sodding, laying drains, making bridges, doors, windows, erecting wharf walls, &c. Great progress has been made at the advanced redoubt, of which the little masonry remaining to be executed will, it is hoped, be finished early next year.

The funds already appropriated are thought to be sufficient within about $5,000 for the service of the next calendar year.

Balance in the Treasury on the 30th September, 1843 -	$19,800 00
To be drawn from the Treasury in the 4th quarter of 1843 -	4,800 00

To be drawn from the Treasury in the 1st and 2d quarters of 1844	$10,000 00
Estimate of the amount required to be appropriated for the half year ending 31st December, 1844	5,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845	10,000 00

Fort Griswold, New London harbor, Connecticut.—The advanced battery is complete, and ready for its entire armament of 20 guns. Its magazine is also finished. It is designed to build a thin wall around the magazine, and also to erect a furnace for heating shot; and both these objects would have been accomplished during the past summer, had it been in my power to consult on the spot with the engineer officer in charge, as to their proper positions and dimensions. Both these points were adjusted at my late visit, and will be attended to early in the coming year.

Balance in the Treasury on the 30th September, 1843	$1,400 00
To be drawn from the Treasury in the 4th quarter of 1843	1,400 00

No further appropriation asked for Fort Griswold at present.

Fort Trumbull, New London, Connecticut.—Operations during the past year have been confined chiefly to completing the scarps of the four bastions, and of four of the five curtains—the whole scarp being now up, except the east curtain, and a small part of the north; grading the esplanade of the northeast and east fronts; removing part of the old work, and quarrying granite. Of the work executed, the principal items are: 3,125 cubic yards of stone masonry in mortar; 170½ cubic yards of brick masonry; 4,714 square feet of stone cutting; 5,686 cubic yards of earth removed; 362 square yards of sodding; and 206 cubic yards of rock quarried.

The exterior battery is finished, and ready to receive its armament of eleven barbette guns; parades of this battery finished, except breast-height wall and banquettes. The block-house has been repaired and made bomb-proof. The place of arms is entirely finished, and ready to receive its armament of six barbette guns. The gorge piers of the several bastions are complete; the piers of north and west curtains are complete, except two of the former and one of the latter; all but one of the casemate arches of the western curtain have been turned.

The unexpended balance will be applied chiefly to casemate piers and arches of the main work.

Balance in the Treasury on the 30th September, 1843	$36,900 00
To be drawn from the Treasury in the 4th quarter of 1843	10,000 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844	21,000 00
Estimate of the amount required to be appropriated for the half year ending December 31, 1844	20,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845	20,000 00

Fort Schuyler, Long Island sound, New York.—On the 30th of September last, the state of this work was as follows: The land glacis, including sodding, nearly finished; concrete foundations have been laid for gun platforms in the left branch of the place of arms and the right branch of the covert way; the necessary ramps, &c. The breast-height walls and traverses of covert way completed; the north branch of the ditch has been graded, and a culvert built for its drainage; the masonry of the coverface completed, except a little coping; the earth work is also nearly completed; the scarp of the main work has been raised to its full height on two of the curtains and two of the tower bastions; and to the full height, exclusive of cordon, throughout the remaining part of the work, except the south demi-bastion and curtain of land front, of which the former has been raised to the height of 27 feet, and the latter to 20 feet; the eastern stair turret has been raised to full height; the southeastern within one foot; the southern within five feet of the same.

The piers of the gun casemates have been completed, and those of the barrack casemates built to an average height of more than eighteen feet. The brick work of the year includes nineteen gun casemate arches, three at the gorges of the tower bastions, and communication arches in the piers of the barrack casemates.

Considerable masses of earth were removed from in front of the water faces.

Balance in the Treasury on the 30th September, 1843 -	$28,000 00
To be drawn from the Treasury in the 4th quarter of 1843 -	9,000 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - - -	19,000 00
Estimate of the amount required to be appropriated for the half year ending December 31, 1844 - - - -	40,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - - -	20,000 00

Castle Williams, New York harbor, N. Y.—The parapet wall of this work was both too low and too thin to protect properly the guns and men upon the upper tier; it is about 600 feet in length, and has been rebuilt of proper dimensions.

Recent service of a heavy gun in the lower tier exhibited such weakness in part of the embrasure as to require very thorough repair in all these openings, which will be finished, if possible, this year. This indispensable repair was not anticipated, and is rather expensive.

The process of repair has exhibited several unavoidable sources of expense which could not be foreseen, creating the necessity for a small additional appropriation, which it is hoped will place the castle in the state of efficiency required by its important position.

Balance of appropriation, nothing.

Estimate of the amount required to be appropriated for the half year ending December 31, 1844 - - - -	$4,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - - -	4,000 00

South battery, Governor's island, New York harbor.—There is a small sum in the Treasury applicable to this work, sufficient to meet the small additional repairs which it is designed to make early next year.

Balance in the Treasury on the 30th September, 1843 -	$1,350 00
To be drawn from the Treasury in the 4th quarter of 1843 -	500 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - - -	850 00

Fort Columbus, Governor's island, New York harbor.—As in the case of South battery, it has not been practicable to execute during the year the slight repairs necessary in the fort; they will be attended to early in the ensuing year, and the sum applicable will suffice.

Balance in the Treasury on the 30th September, 1843 -	$1,600 00
To be drawn from the Treasury in the 4th quarter of 1843 -	1,000 00
To be drawn from the Treasury in 1st and 2d qrs. of 1844	600 00

Sea wall, Castle Williams, Governor's island, New York harbor—The money heretofore granted for the above object has been expended in a very satisfactory manner; the wall erected is of the most substantial and durable kind, perfectly protecting the immediate front of the castle. The money was not, however, quite sufficient to give all the extent to the wall which is found to be expedient, and it will be necessary, at a future day, to ask for a small appropriation for that purpose. The temporary arrangement made to secure the two extremities will answer for a year or two.

Permanent wharves, Fort Columbus, Governor's island, New York.—The abutment adjoining the shore has been completed, except the coping; the wooden bridge connecting the abutment with the pier head is about to be commenced, and the whole work is expected to be completed before the coming winter. The unexpended balance being considered sufficient for completion, no further appropriation is asked for this work.

Balance in the Treasury on the 30th September, 1843	$2,450 00
To be drawn from the Treasury in the 4th quarter of 1843	2,450 00

No further appropriation is asked.

Fort Gibson, Ellis's island, New York harbor.—This battery is in the same condition as reported in my last annual report.

It has not been practicable to direct the attention of an officer to the objects mentioned therein, as exacting a little additional work. I trust they may be accomplished next year, without asking any additional grant from Congress.

Repairs of Fort Wood, Bedlow's island, New York.—The sea wall and advanced battery, to which operations have been hitherto restricted, are nearly completed—nothing of importance remaining to be done but laying down some of the pintle centres and gun traverses. This advanced battery is calculated for 45 guns, of heaviest caliber.

It is now designed to take up the necessary repairs of the fort itself.

Balance remaining in the Treasury on the 30th September, 1843	$22,700
To be drawn from the Treasury in the 4th quarter of 1843	5,500
To be drawn from the Treasury in the 1st and 2d quarters of 1844	12,200
Estimate of the amount required to be appropriated for the half year ending December 31, 1844	10,000
Estimate of the amount required to be appropriated for the half year ending June 30, 1845	15,000

Repairs of Fort Hamilton, New York harbor.—The decayed floors and lining of the casemates of the advanced redoubts have been removed, and the rooms and galleries paved with bricks, laid on a foundation of concrete; granite platforms and iron rails have been provided for the casemate howitzers; concrete window sills and brick lintels have been substituted for the former wooden ones; the doors and windows have been repaired and partly kyanized; the magazines are thoroughly ventilated, and floored and ceiled with kyanized wood; all the embrasures have been repaired; the half embrasures of the parapet have been filled up, the wall raised for barbette guns, and provided with coping; the arches, although covered with sheet lead, were found to leak very badly; one half of them have been uncovered and provided with a bituminous covering, half an inch thick, and with improved arrangements for drainage; the other half are to be covered and drained in like manner; some of the earthen slopes of the covert way have been made more gentle and re-sodded; the drainage of the ditch improved; preparations are in progress for kyanizing the timber for the renewal of the drawbridge, and for the partitions of the communication galleries.

The covert way has been modified by removing the top of the breast-height wall, and by other changes essential to defence. The result of these labors will be to put this important little work in condition of service, and to extend materially the accommodation of the garrison of Fort Hamilton, both in respect to people and stores.

Nothing of importance has been done at the fort itself, on account of the late period at which the appropriation became applicable, and the restrictions imposed by the state of the Treasury as to the amount to be expended. Serious damage was done, on the 22d of August last, to some of the exterior slopes of this work, by a rain of unprecedented violence, and which caused natural banks to fall, that had stood in safety for a period extending back beyond the memory of man. These broken slopes of the fort will, as far as practicable, be repaired this fall, and in the spring it is proposed to proceed with repairs and modifications indispensable to the efficiency of the fort, and the convenience and health of the garrison.

Balance in the Treasury on the 30th September, 1843 -	$15,364 36
To be drawn from the Treasury in the 4th quarter of 1843 -	5,000 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - - -	10,364 36
Estimate of the amount required to be appropriated for the half year ending December 31, 1844 - - -	10,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - - -	5,000 00

Repairs of Fort Lafayette, New York harbor.—Operations have been confined to painting certain parts of the wood work, and to some other small matters.

The first and second batteries are now armed and ready for service; the guns of the barbette battery are now in position, but not yet furnished with carriages. The funds now applicable to the work are sufficient for the contemplated modification of the magazines, and for some additional slight repairs.

Balance in the Treasury on the 30th September, 1843 -	$2,841 00
To be drawn from the Treasury in the 4th quarter of 1843 -	2,841 00

No further appropriation is asked.

Repairs of Batteries Hudson and Morton, Staten island, New York harbor.—With the exception of some injury caused to the natural banks by the storm of the 22d August last, these batteries are in the condition reported last year: they are both ready for service. Two or three small magazines should, however, be constructed in suitable positions. An old culvert was, by the force of the torrents of rain, carried away, endangering the foundation of a light-house standing in one of the batteries. This has been repaired by the Treasury Department. The injury done to the banks in front of the batteries is now in course of repair by the engineer officer in charge.

The commissary general of the State of New York has taken under his care the State lands which form the site of these batteries, and has placed at Forts Tompkins and Richmond a military storekeeper of the State. The ground surrounding the batteries and forts has been leased to private individuals.

The great value of this position in the defensive system of the harbor of New York, will justify my again urging the importance of the purchase of this position from the State. It is the key of the harbor—its proper occupation by military works being indispensable to a good defence of the main channel.

I beg leave to quote on this subject from my report of last year:

The consent of the State of New York having been obtained thereto, the sum of $15,171 97 has been expended within the last eighteen months in bringing into condition for service two of the batteries on the important position on the west side of the Narrows. But there yet remains much to be done there. The water battery, very essential to the defence, is in ruins, and the fort on the hill (Fort Tompkins) indispensable to guard the defences from being turned in the rear, and rendered useless, is in the same condition. Application has several times been made for an appropriation to purchase these works from the State, and commence operations; and it is to be hoped that, for the reasons heretofore urged, this authority may be accorded. Even the sum of $50,000, which would embrace the purchase of the site and the erection of small magazines for the service of the newly prepared batteries, would suffice for the present, and, besides accomplishing these objects, would allow the exercise of the authority of the General Government in preservation of the property there. The officer of engineers who has made the repairs says: "The tract is open to the trespasses of the cattle of the neighborhood, and of the idlers who constantly resort there from the city of New York. These batteries are now in perfect order, but, unless measures are taken for their protection and preservation, they will soon relapse to their former ruinous condition."

A suggestion, worthy of consideration, has been made—that Fort Gansevoort (a fort erected during the last war) and its site, within the city of New York, should be sold, and the proceeds applied to the purchase of the State works and their site, on Staten island. Fort Gansevoort is in a position which is every day becoming more and more masked by the growth of the city into the river; and, before many years, its few guns, even if the expense were incurred of putting the battery in good condition, would be less serviceable than if arranged on neighboring positions; and the addition to the strength of the defences of the city, which would result from expending the proceeds of the sale upon the purchase and repair of the Staten island works, would greatly exceed the force of this work, even in its best days. For these and other reasons of a like nature, I advise that Congress be asked to authorize the sale of Fort Gansevoort and the ground on which it stands, and also the application of the funds as above mentioned. I am not able to say what sum would be realized, but think, if this course be adopted, that we may dispense with the sum asked for the Staten island works in the estimates of this office for the half year ending December 31, 1844.

Estimate of the amount required to be appropriated for the purchase of site and commencement of operations for the half year ending December 31, 1844 - - -	$50,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - -	50,000 00

Sandy Hook, New York harbor.—In respect to the project of a defen sive work on this position, I cannot do better than renew the recommendation in the words of my annual report to your department, of November 19, 1841:

The original project of defence for New York harbor contemplated two large casemated batteries on the shoals about three miles outside of Sandy Hook. They were designed to prevent an entrance into the lower harbor—a large and admirable roadstead, lying between the Narrows and Sandy Hook.

A recent survey of the exterior mouth of the harbor has shown, however, that the works would be unavailing, from the existence of another channel which they would not command. This newly discovered channel may, moreover, be the result of natural changes in the form and position of the shoals; and so long as this point remains unsettled it would obviously be unwise to erect expensive structures that might be the subject and even the cause of other changes.

The introduction into the naval service, within a few years, of numerous vessels of light draught of water (which vessels could avoid any works erected on the shoals) removes all reason for adhering to the original design.

Abandoning the advanced position, a work on Sandy Hook becomes necessary; and its immediate commencement is urged, for the following reasons:

1st. It will exercise an important action on the passage of all large vessels.

2d. It will prevent the occupation of the best anchorage in the lower harbor by an enemy, who, anchored here, would at all seasons of the year maintain a perfect blockade. No stress of weather would oblige him to take an offing.

3d. Although an enemy might perhaps anchor in the lower bay beyond the reach of shot and shells from this work and those at the Narrows, still there is no probability that the anchorage would be sought for any purpose of blockade or investment, when it could be entered or departed from only by passing under the fire of the heavy battery now proposed.

4th. It will remove the landing place of an expedition against the city or the navy yard to a considerable distance from both; whereas such a landing could now be made within five or six miles of the latter, with no obstacle intervening between the enemy and his object.

Many other advantages might be enumerated. The above are deemed sufficient, however, to show the necessity of a work on the point named.

For the commencement of such a work, the following estimate is made:

Sum required to be appropriated for the half year ending December 31, 1844 - - - - - -	$25,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - -	25,000 00

Fort Mifflin, Delaware river.—It has not been possible to spare an officer to conduct the operations necessary for the repair of portions of this fort, and for the preservation of the site. I trust it will be practicable next year. In the mean time, the amount now applicable, having been appropriated since 1841, will, except a small portion pledged for expenses of supervision, revert to the Treasury, if not reappropriated at an early day, which I respectfully urge.

Balance in the Treasury on the 30th September, 1843 -	$5,000 00
To be drawn from the Treasury in the 4th quarter of 1843 -	100 00
Balance liable to revert to surplus fund on 31st December, 1843, and requested to be reappropriated for the half year ending December 31, 1844 - - - - - -	4,900 00

Fort Delaware, Pea Patch island, Delaware bay.—Operations on this work are still awaiting the adjustment of the title to the island. As the sum provisionally appropriated in September, 1841, will revert to the surplus fund at the end of the present year, I have to reqnest that it may be reappropriated under the same provision as before, namely: that the sum is to be applicable only in case the title to the island shall be decided to be in the United States.

Balance in the Treasury on the 30th September, 1843, liable to revert on the 31st December, 1843, and estimated to be reappropriated for the half year ending December 31, 1844 - - - - - - - -	$81,465 25

Fort McHenry, Baltimore, Maryland.—Two or three small jobs needed at this work, to perfect its defensive condition, have necessarily been postponed, for want of an officer to assign to them. I hope to be able to execute them the coming year.

There is no remaining balance to the credit of this work; but as the small expenditures contemplated are of a nature to fall perfectly within the appropriation for contingent expenses, it is proposed to apply the necessary amount from that fund, not asking a specific grant.

Fort on Sollers's Point flats, Baltimore harbor, Maryland.—I cannot do better than to renew the proposition to commence this work in the words of the annual report for the year 1839:

With Fort McHenry as the only defensive work between Baltimore and the Chesapeake bay, that city is wholly without defences against an attack by land—such, for instance, as was undertaken by the English during the last war—and is, at the same time, not adeqnately protected from an attack by the river.

The first step to be taken in the creation of a better system of defence for this harbor, is the erection of a strong casemated battery on the outer extremity of Sollers's Point flats, a work projected by the board of engineers many years ago. This work being completed, the channel of the river will be powerfully commanded, and an enterprise advancing against the city from North point, or along the opposite shore, will be liable to be cut off from all retreat by troops thrown across the river, or sent down the river and landed near the work.

The position is a good one, the work is indispensable to the security of Baltimore; and, as much time must necessarily be consumed in raising the foundation out of water, it seems important that immediate measures be taken for the commencement of the work, and to this end a small appropriation is asked for next year.

Estimate of the amount required to be appropriated for the half year ending December 31, 1844 - - - -	$25,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - - -	25,000 00

Forts in Annapolis harbor, Maryland.—The same want of an officer to take charge of these works which prevented a commencement of repairs last year has operated in like manner during the present season. It has not been practicable to assign to the trust a person of due experience, without drawing him from more important ones. I hope, however, to make such arrangements for next year, as will permit the repair to be begun; and therefore have to request that the sum now in the Treasury to the credit of these works, and which will lapse to the surplus fund at the end of the present calendar year, may be reappropriated at an early day.

Balance in the Treasury on the 30th September, 1843, liable to revert on the 31st December, 1843, and estimated to be reappropriated for the half year ending June 30, 1844 -	$5,000 00

Repairs of Fort Washington, Maryland.—The operations of the year have been confined chiefly to repairs and alterations of existing portions of the work. The *labor* has been applied to grading the parade, terrepleins, ramps, and ditch of the demilune; unmasking the fire of its right face, by removing the high bank in front of the same; forming its glacis, and that of the left face; embanking various parts of the work, &c.

The *brick masonry* has been applied to coping of demilune counterscarp, 628 running feet; relaying old drains, 157 running feet; constructing new drains, 523 running feet; pointing, 7,045 square feet; parade wall, building mortar mill, and paving.

The *stone masonry* has been applied to relaying a portion and pointing the whole of the counterscarp of the demilune; repairing scarp; cutting and laying steps for shot furnace and guard room; foundation of parade wall; and constructing about one-third of a new caponier casemate, designed to flank the most exposed part of the work. With the exception of a little strengthening, required by the pintle blocks, the demilune is in complete repair, and ready for service.

A portion of the embankment executed has been for the security of an angle of the work which is exposed to a peculiar danger, namely, the sinking of the earth which lies in front of it. Of this there are several curious instances in the immediate neighborhood. This point demands, and is receiving, the close attention of the officer in charge, who will, I have little doubt, ascertain the better remedy.

Balance in the Treasury on the 30th September, 1843 -	$15,400 00
To be drawn from the Treasury in the 4th quarter of 1843 -	6,400 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - - -	9,000 00
Estimate of the amount required to be appropriated for the half year ending December 31, 1844 - - -	18,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - -	10,000 00

Fort Monroe, Hampton roads, Virginia.—Operations on this work, which had been suspended for a time by the condition of the Treasury, were resumed in November last, and have embraced the following objects, to wit: Repairs of parade wall of fronts 1, 2, 3, 5, and 6; construction of breast-height wall of No. 5, main work, and covert way of 5 and 6; revetting interior parapet slope on fronts 4 and 5 of the main work, and on the covert way of front No. 6; laying and resetting coping; altering embrasures for carronades and howitzers on flanks of Nos. 1, 2, and 3; preparing and laying pintle blocks and traverse circles on fronts 5 and 6, and traverse irons on 5 and 7; relaying pavement and traverse stones in gun rooms on fronts 1, 2, 3, and 7; paving terrepleins, constructing and repairing ramps and ramp drains, and other drains in various parts of the work; ventilating and improving the powder magazines on fronts Nos. 2, 3, and 5; pointing the masonry of various parts of the work; repairing arches on front No. 5, and inserting conduit pipes for drainage on 5 and 6; forming banquettes on 5 and 7, and laying banquette steps on 5 and 6; embanking and sodding covert way of 5 and 6; laying zinc on breast-height wall of No. 4; constructing lock gate; forming dike on No. 5; paving and draining ditch of 5 and 6; altering wing walls of No. 7; constructing a wattled fence, with strong piles, for the preservation of the beach, in front of Nos. 1, 2, and 3; constructing laborers' quarters, and slightly repairing engineer quarters.

Balance in the Treasury on the 30th September, 1843 -	$46,765 11
To be drawn from the Treasury in the 4th quarter of 1843 -	11,800 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - -	34,965 11
Estimate of the amount required to be appropriated for the half year ending December 31, 1844 - - -	15,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - -	15,000 00

Fort Calhoun, Hampton roads, Virginia.—As stated in former reports, the foundations of this work were loaded prior to December, 1841, with a weight much greater than that to be ultimately sustained, and the prosecution of the work postponed till all subsidence shall have ceased. During the year preceding my last annual report, the centre of the mass had subsided less than half an inch, the embrasures about seven-eighths of an inch. Of the subsidence during the past year the statement has not yet been received at this office, though it is believed to have been in the decreasing ratio heretofore noticed. While awaiting the period to commence the superstructure, a balance in the Treasury has become liable to revert to the surplus fund, which it is desirable to have reappropriated, as needed within a year for the collection and preparation of materials. No further sum is now asked.

Balance in the Treasury on the 30th September, 1843 -	$26,252 01
To be drawn from the Treasury in the 4th quarter of 1843 -	10,000 00
Amount liable to revert to surplus fund, and estimated to be reappropriated for the half year ending December 31, 1844 -	16,252 01

Repairs of Fort Macon, Beaufort harbor, N. C.—The operations on these repairs have been mainly as follows, within the year:

The scarp walls of the two land fronts have been strengthened by counter-forts, in the same way that fronts 1, 2, and 3, had been previously strengthened; the parapets of the five fronts which had been removed for these operations have been replaced and graded to their proper slopes, the exterior slopes being sodded. The roofs of the main casemates have received particular attention, in reference to security from leaks, the leaded roofings of the counterscarp arches made tight; much pointing done in various parts of the work; several gun traverses have been laid in the main work; nearly all of the interior slopes of the parapet of the main work and covert way have been revetted with kyanized wood. On fronts 4 and 5, the terreplein and banquettes of the main work, and a portion of the banquettes of the covert way, have been graded; the glacis coupée has been graded, and its exterior slope sodded nearly to completion; the floors of the counterscarp casemates have been raised fifteen inches, preparatory to being paved; the ditch has also been raised, for better drainage. Several small jobs have been done, for the improvement of the magazine, cisterns, postern, &c. Of the work still required for the completion of repairs, the principal are—the construction of six carronade embrasures for the defence of the ditch; laying a few sets of traverse circles and a number of pintle blocks; the completion of the wood work of the new gates; the grading of the terrepleins of three fronts of the main work, and those of the covert way, and the completion of the banquette of the latter; the grading of the ditch; the raising of the glacis of front No. 5 about eighteen inches; and the regulation of the glacis of fronts 1, 2, and 3. For the completion of these repairs, and the erection of a permanent wharf, an appropriation of $10,000 is requested.

Balance in the Treasury on the 30th September, 1843 -	$9,063 98
To be drawn from the Treasury in the 4th quarter of 1843 -	8,000 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - - - -	1,063 98
Estimate of the amount required to be appropriated for the half year ending December 31, 1844 - - -	10,000 00

Preservation of the site of Fort Macon, N. C.—A large quantity of palmetto logs and of rough stone have been obtained, for the formation of jettees. A new western jettee (No. 4) has been built out 225 feet, nearly 1,000 tons of stone having been placed on it; about 1,000 tons of stone and a grillage of 50 feet have been added to jettee No. 2, increasing its length to 350 feet, and its height to that of high water; 900 tons of stone and a grillage of 50 feet have been added to jettee No. 1, increasing its height to that of high water, and the length of the portion thus raised to 211 feet.

A small jettee, containing about 30 tons of stone, has been placed between Nos. 1 and 2.

For the further security of this site, it is proposed next to increase slightly the length of the two principal jettees now constructed, and to construct two new ones: to do which, the money now on hand is believed to be adequate.

The general result of the operations continues to be favorable, and to justify the belief that the site will, by the process, be permanently secured. It is as yet too soon to say when operations may cease, but there is reason to hope that any further appropriation may be dispensed with; at any rate, none need be asked for next year.

Balance in the Treasury on the 30th September, 1843 -	$12,342 50
To be drawn from the Treasury in the 4th quarter of 1843 -	8,100 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - - -	4,242 50

No appropriation asked for the year ending 30th June, 1845.

Repairs of Fort Caswell, Oak island, North Carolina.—A considerable extent of the interior slope of the parapet of the main work and of the covert way has been properly revetted; the interior slopes of the rampart and counterscarp have been remade; the ramps have been readjusted; the floor of the citadel, which had sunk in some places, has been raised to its proper level; culverts have been enlarged; the ventilation of the magazines has been improved; the banquettes and terrepleins have been readjusted and graded; the roofing of the caponiers has been completed; the bottom of the cunette graded; some repairs have been made on the outer dike, and a substantial lock gate constructed for it.

Of the repairs still to be made, the most important are, the readjustment of the slopes of the glacis coupée, glacis and parapet of main work; the latter already considerably advanced; the completion of the slopes of the parapets of the fort and covert way; the pavement of the caponiers; additional improvement of the ventilation of the magazines, and readjusting, in some places, the terreplein of the main work. Those parts of the work which have already been repaired are in good condition. No further appropriation is asked for the fort.

Balance in the Treasury on the 30th September, 1843 -	$3,460 00
To be drawn from the Treasury in the 4th quarter of 1843 -	3,460 00

Preservation of the site of Fort Caswell, North Carolina.—In my last annual report, an appropriation of $6,500 was asked for the construction of a jettee, and an extension of the wharf; that appropriation is again solicited, as necessary for the preservation of the site.

No balance in the Treasury.

Estimate of the amount required to be appropriated for the preservation of the site of Fort Caswell for the half year ending December 31, 1844 - - - - - -	$6,500 00

Castle Pinckney, Charleston, South Carolina.—It has not been practicable to apply, during the present year, the means of additional stability required by the pintle centres of the guns. This will be attended to at an early day, without asking any further grant from Congress. In all other respects the work is in good order.

Fort Moultrie, Charleston harbor, South Carolina.—Some slight repairs have been made within the year to this work, and some additional ones are still necessary, which will be accomplished by means of a small balance remaining in hands of the agent.

No appropriation is asked for this work.

Preservation of the site of Fort Moultrie, Charleston harbor, South Carolina.—Since January last, labor has been executed in a small way on these works, with a small balance in hands of the agent. By replacing the fallen stones upon the foundations of the old crib work, and adding some new material, a permanent character to the portions thus reconstructed has been given.

As these breakwaters were entirely experimental in the first instance, it was proper to erect them in the cheapest way. Having been proven to be effectual, it is now necessary to give permanence to them; and to this end it is desirable, as stated in my report of last year, to build on the foundations of the cribs a regular stone breakwater, similar to that at Fort Johnston. The old works will furnish a large proportion of the materials. I have therefore to renew the application made last year for a specific appropriation for this object.

Balance in the Treasury on the 30th September, 1843 -	$102 69
To be drawn from the Treasury in the 4th quarter of 1843 -	102 69
Estimate of the amount required to be appropriated for the half year ending December 31, 1844 - - -	16,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - -	7,000 00

Dike on Drunken Dick shoal, Charleston harbor, South Carolina.—This dike of rough granite, resting on grillages of palmetto logs, and running from a point opposite Fort Moultrie out, ultimately, to solid rock in deep water, in a direction nearly at right angles to the shore, has now been completed for a length of 380 feet—60 feet more being in progress. Operations were commenced in April last.

The granite for this breakwater is obtained from the North; the logs from the neighboring islands. As the work is now extended beyond low water, the stones can be delivered on the spot from scows and lighters, and its construction will in consequence be more rapid and less expensive. It is designed to continue it steadily forward, as far as it shall be found advantageous and the means will permit. This mode of progress is favorable to a development of its effects; so long as new benefits continue to flow from it, its progress may be continued—to be arrested the moment its beneficial action shall have ceased.

Balance in the Treasury on the 30th September, 1843 -	$35,149 08
To be drawn from the Treasury in the 4th quarter of 1843 -	8,149 08
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - - - -	20,000 00
Estimate of the amount required to be appropriated for the half year ending December 31, 1844 - - -	25,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - -	25,000 00

Fort Sumter, Charleston, South Carolina.—This work has advanced with steadiness, and without accident or injury. The stone work of the foundations of the gorge has been completed, and of the greater portion of two piers on each flank; 1,500 tons of rough stone have been used on the enrockment of the gorge and its western angle; the brick work of the scarp, casemate piers, and parade wall of the gorge, has been raised to a height of three feet above the stone foundation. No evidence has been observed of any settling in the foundations during the year.

The present condition of this work, as well as its importance to the security of the harbor, demands that it should be prosecuted with vigor. Real economy will be consulted by availing of the present well-organized system of operations to push the work as fast as the condition of the Treasury will allow.

Balance in the Treasury on the 30th September, 1843 -	$55,874 80
To be drawn from the Treasury in the 4th quarter of 1843 -	13,200 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - - - -	25,000 00
Estimate of the amount required to be appropriated for the half year ending December 31, 1844 - - -	50,00000
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - -	35,000 00

Preservation of the site of Fort Johnston, Charleston harbor, South Carolina.—In October of 1841, as mentioned in my last annual report, a storm of great violence caused some injury to the old works, and to those in progress for the protection of this site. After repairing this damage, the work was resumed of extending the breakwater in a southerly direction nearly parallel to the shore, with occasional spurs to break the force of the waves. This is expected to be finished with present means, and by the middle of December next; but for the security of this work an embankment of shells, and sand in its rear, is found to be necessary; and an estimate for that object is presented by the agent, requiring a small additional appropriation.

Balance in the Treasury on the 30th September, 1843, nothing.

Estimate of the amount required to be appropriated for the half year ending December 31, 1844 - - -	$1,500 00

Fort Pulaski, Savannah river, Georgia.—Though retarded in the sickly months of July, August, and September, the operations have been continued since the appropriation of the last Congress became applicable.

The fort itself is, in the main, complete, requiring only some smaller, though indispensable, operations, namely, painting the inside of quarters and barracks, raising some additional masonry for the security of the magazine, and closing some small openings left in walls for communications; grading, paving, painting, plastering, laying gun tracks, erecting bridges and drawbridge, with the requisite machinery. The outworks are not so forward.

The necessary excavation, and the piling and grillage for the scarp and gorge of the demilune, have been executed, and the wall is in progress. Much of the earth of the ramparts has been placed, and also that for the advanced battery. Considerable work has been executed upon the dikes, breakwater, and wharves, which were materially injured by a severe gale in October last. The great height to which the water rose on this occasion, and its effects, have convinced me that it will be no more than prudent to construct a counterscarp wall to the ditch—an operation which it was hoped might be saved.

An accurate survey of the island has been made by the engineer within the year.

Balance in the Treasury on the 30th September, 1843 -	$32,819 00
To be drawn from the Treasury in the 4th quarter of 1843 -	12,000 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - -	20,819 00
Estimate of the amount required to be appropriated for the half year ending December 31, 1844 - - -	15,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - -	10,000 00

Defences on the coast of Georgia.—I beg leave to renew the application made last year for an appropriation for the commencement of a fort on this coast, on such site as the President shall select. This project met the warm support of your predecessor, and was reported by the Military Committee, but not acted on by Congress.

Estimate of the amount required to be appropriated for the half year ending December 31, 1844 - - -	$15,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - -	15,000 00

Repairs of Fort Marion, St. Augustine, Florida.—Operations commenced in February last, a large quantity of materials having been collected during the previous year.

At the three salients, and other points where the old work had given way, a strong granite wall has been built (10 feet high by 6 or 7 feet thick, and in all 224 feet long) on a foundation of concrete; and all the remaining part of the wall has been refaced with granite to a height about two feet above ordinary high water, and with shell stone above that level. A new breast-height wall for the whole battery has been formed, either by new construction or by modification of old work; and a culvert has been constructed near each end, under this water or advanced battery, which thoroughly drains the ditch of the main work. The parapet of the advanced battery, for a short distance, has been completed, the surface of its superior slope being formed of shell stone, or concrete; in the same manner it is proposed to finish the parapet of the entire battery. Twenty traverse circles have been placed on this battery, and the pintle blocks are on hand, and nearly ready to be laid. The new terreplein behind the parapet of this battery has been graded accurately, and is now covered with thickly matted grass. Two thousand one hundred cubic yards of masonry have been laid during the year, and 1,500 yards of sand embanked. The unexpended balance is sufficient to complete the repairs of the water battery.

I consider it probable that repairs will be needed at Fort Marion itself, but shall not be prepared to say to what extent they should be applied until I shall have made a personal inspection thereof, which I hope to make early next spring. In the mean time, the money remaining of former appropriations will suffice.

Balance in the Treasury on the 30th September, 1843 -	$3,650 00
To be drawn from the Treasury in the 4th quarter of 1843 -	3,650 00

No further appropriation is now asked.

Pensacola harbor, Florida.—The fortifications of this harbor at the present moment, so far as the works themselves are concerned, constitute a formidable and efficient array of strength; and within two or three years the entire system of local defence will be complete, excepting only such auxiliary means as may, without danger, be left to be executed when about to be needed.

But there are other considerations connected with the security of this great harbor, which are independent of mere defences, whether naval or military—such, I mean, as relate to a safe and easy communication with sources of supply and relief. These are of more than common interest here, because any enemy that should be able to test the arrangements for defence would, in doing so, completely cut off all the existing channels of communication. This isolated position of Pensacola, in reference to any productive or populous region, is its peculiar disadvantage; which has all along been kept in view by those connected with the defensive preparations, and by them has been repeatedly presented to the notice of the Government.

There was a time when private enterprise seemed about to convert this mere harbor of refuge into one of the great entrepots of Western commerce, by opening a direct and speedy communication with the interior; but since the failure or postponement of that hope, the extent to which the General Government may in such a case interfere to carry out enterprises having such an object, would seem to have become a very important question.

Fort Pickens, Pensacola harbor, Florida.—As the attention of the engineer officer could not well be diverted from other more pressing objects, no operations have been carried on at this work during the year. My inspection of the work last spring satisfied me of the necessity in reference to the accommodation, and possibly the health of the garrison, of several small improvements and modifications, which will be taken up the moment the engineer officer has opportunity. It is hoped the means now applicable will suffice. At any rate, no new appropriation is asked.

Balance in the Treasury on the 30th September, 1843 - -	$9,736 40
To be drawn from the Treasury in the 4th quarter of 1843 -	3,000 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - -	6,736 40

Fort McRee, Foster's bank, Pensacola, Florida.—Some experience in the use of bituminous covering under the hot sun of this climate, and experiments made upon this work during the current year, have led to such an application of this substance upon the terreplein, as it is hoped, will effectually prevent leaks into the casemates in every season of the year. The superintending officer has devoted much personal attention to this important matter. One hot-shot furnace has been completed with the exception of its wooden roof, and a few days' work will complete another. A new brick coping of the parapet has been constructed along three-fourths of its extent. Sand thrown up by the wind against the scarp has been removed, and the place of supply covered with the heath bush, in the hope that grass will grow up before the decay of the bushes, and thus protect the sand from the further action of the wind. Some pointing and other small matters have been attended to.

To avert the decay of the beams (pitch pine) supporting casemate platforms, holes will be bored into the ends inserted in the walls, and filled with strong corrosive sublimate. Stoves will be put upon the floors of each of the gorge rooms, and on those of the wings of the second story, for the accommodation of the garrison; but, in the belief that the fort is deficient in the necessary accommodation for officers' quarters, plans and estimates are made for the erection of a building for that purpose outside the fort, and accordingly a further appropriotion of $5,000 is asked.

Balance in the Treasury on the 30th September, 1843	$1,899 61
To be drawn from the Treasury in the 4th quarter of 1843	1,899 61
Estimate of the amount required to be appropriated for the half year ending December 31, 1844	5,000 00

Fort Barrancas, Pensacola harbor, Florida.—Operations have been carried on steadily, though not rapidly, during the year. The glacis has been completed, with the exception of some adjustment of slopes, and planting and cultivating grass. The counterscarp and its crowning slope is also done. The floors of the underlying galleries and gun casemates remain to be paved with bricks, and the traverse circles and rails have to be laid. The four small magazines under the glacis are nearly fitted up. The scarp wall requires for completion about 1,600 cubic yards of masonry; the relieving arches have been finished and covered with earth; the two magazines, connected therewith, are nearly completed, as also the wood work of the bridges. The subterraneous communications are completed.

It is anticipated that no more money (at any rate, not much more) will be wanted for the completion of the main work of Fort Barrancas, and its advanced battery standing near the edge of the water; and for those particular objects, therefore, no additional grant is now solicited. On account of the construction of its advanced redoubt, equally necessary with itself for covering the approaches to the navy yard, an appropriation in the next fiscal year is solicited of $25,000. As intervals of leisure could be found from engagements on the works in progress, the assistant engineer employed himself in making a detailed survey of the immediate localicy of the Barrancas defences.

Balance in the Treasury on the 30th September, 1843	$19,750 00
To be drawn from the Treasury in the 4th quarter of 1843	12,000 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844	7,750 00
Estimate of the amount required to be appropriated for the half year ending December 31, 1844	15,000 00

Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - -	$10,000 00

Repairs of Fort Morgan, Mobile point, Alabama.—Operations, resumed in the month of July, have comprised, building a temporary wharf, preparations for closing useless posterns, modifying embrasures, pointing brick work, ventilating the ceiling of citadel rooms, adjusting traverse plates, embanking advanced bastion, and repairing wood work of casemates. The advanced bastion is nearly ready to receive its traverse circles for barbette guns.

The operations proposed for the coming year, and for which estimates are presented, embrace the continuation of the repairs above mentioned, and the others following, namely: repaving and otherwise repairing casemates on all the fronts, repairing parade wall, repairing postern on front No. 5, repairing scarp and counterscarp wall and embrasures, drainage of parade and ditch, and building four cisterns.

Prior to the commencement of operations this year on this work, the officer in charge and his assistant were engaged, as elsewhere mentioned, in surveying the mouth of Mobile bay. Since August, the drawings connected with this survey have been in progress.

Balance in the Treasury on the 30th September, 1843	$13,220 00
To be drawn from the Treasury in the 4th quarter of 1843 -	6,500 00
To be drawn from the Treasury in the 1st and 2d qrs. of 1844	6,720 00
Estimate of the amount required to be appropriated for the half year ending December 31, 1844 - - -	8,500 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - - -	12,500 00

Defensive works between Mobile bay and the Rigolets.—It is my duty here to renew my recommendation, that works between these two parts of the Gulf, including the western outlets of Mobile bay, be commenced without further delay. The proposition has always had the sanction of the Executive, to which it was recommended by the obvious importance and necessity of such works, and it has also been sustained by the Military Committee of the House of Representatives. It has not been acted on by Congress.

While there was a suspension of the repairs of Fort Morgan, during the last winter and spring, for want of funds, the engineer officer there stationed was directed by me to make an exact survey of the above-mentioned outlets, in connexion with the main entrance. Of the latter, and of a portion of the bay above, there exists an excellent map, executed many years ago by Colonel Kearny, of the topographical engineers, but as to the lateral issues mentioned there was no trustworthy information. The maps of the survey executed by the engineer officer may be soon expected, and will no doubt exhibit clearly the necessity of some additional works, though they may be small. I accordingly repeat my estimates for the appropriation for the fiscal year ending June 30, 1845, of $30,000, for the commencement of works of fortification for the defence of the Gulf frontier, at such positions between Mobile bay, in the State of Alabama, and the Rigolets, in the State of Louisiana, both inclusive, as, in the opinion of the President, may be best adapted to the purpose.

Estimate of the amount required to be appropriated for the half year ending December 31, 1844 - - - -	$15,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - -	15,000 00

Repairs of Fort Pike, Rigolets, Louisiana.—The drawbridge has been put up, banquettes laid along the two land fronts, the brick pavement of the same fronts completed, terreplein of the circular water front repaired and repointed. Pointing has been done on various parts of the work; some deficient stone andiron traverse circles have been supplied; and defects in drainage have been remedied. The only additional repairs reported as necessary by the superintending engineer at this work are, the removal of the decayed zinc covering of the parapets which lie over the casemates of the three fronts, and the substitution of an asphaltic covering; for which purpose the necessary funds will be remitted from the balance of appropriation "for incidental expenses attending the repair of fortifications."

No further appropriation for this military work is necessary; but, for the preservation of the ground on which it stands, a small grant of money is indispensable.

Ever since the establishment of this fort, the action of the waves and of the current has been eating in upon the site, notwithstanding the preventives resorted to. While these have certainly retarded this hostile action, they have been palliatives rather than cures; and, in the end, the water has gained so materially upon the land, that the immediate application of means, to prevent further effect, is indispensable. In view of this necessity, I called last winter on the engineer officer present to make such a survey of the water pass, of the neighboring grounds, and of the immediate site, as would allow the action of the water to be thoroughly understood. His other pressing avocations have, as yet, prevented the completion of the duty, although his results may be expected during the winter. In the mean time, on my personal inspection of the locality in May last, I became satisfied that a remedy could be applied; and, as it is of the greatest importance that no time should be lost, I have to request that the sum of $5,000 may be appropriated for the purpose, to be applied in the half year ending December 31, 1844. The passing waters and the waves are now kept from rolling into the ditch of the fort only by a line of pickets, already, to some extent, broken and loose. The particular measure to be adopted will be the subject of careful examination and study.

A neighboring position, occupied, as a part of the same post, by the hospital building, surgeons' quarters, &c., is also suffering rapidly from the abrading action of the water, as I witnessed last spring, and as has been repeatedly stated by officers of the garrison. I have caused a survey to be made of this ground also, by the same engineer officer; and, when on the spot with him, and with his project for the protection of the site in hand, I examined the injury. I fully approve of the remedy he proposes, namely, the erection of a sea wall; and, with slight modification, nothing can be better than his project. A copy of his drawings and estimates have been daily looked for; but, as these have been delayed by his unavoidable occupation on other matters, I have myself made a rough estimate, according to which the expense will be about $6,000; for which sum I have to ask an appropriation for the protection of the site of the hospital establishment at Fort Pike.

This position of the hospital, besides its convenience in many respects, is deemed to be of remarkable salubrity.

Making the total estimate for the preservation of the site of Fort Pike and its dependencies, for the half year ending December 31, 1844, $11,000.

Fort Wood, Chef Menteur, Louisiana.—The more important repairs of this work, such particularly as had reference to defence and efficiency, have been made; but there are others which, though they may bear less upon these points, are essential to accommodation and health of the troops, and the preservation of public property; and all such are about to be taken in hand. They are, chiefly, the paving of the terreplein of the bastion and half bastions of the land fronts; repairing portions of the terreplein already laid; and pointing the masonry. The counterscarp slopes, banquettes of the covered way, and crest of the glacis, have to be repaired and relevelled. The decayed zinc covering of the parapets over the casemates has to be removed, and replaced by an asphaltic covering. All which purposes it is designed to accomplish out of the appropriation "for incidental expenses attending the repairs of fortifications." No further specific grant is asked.

Battery Bienvenue, bayou Bienvenue, Louisiana.—The only repairs of this work made this year have consisted in securing the pintle arrangements of its barbette guns, and making some slight improvements upon the magazine. It has been for some time turned over from the hands of the Engineer department.

The repairs of the barracks and quarters, not coming within our province, were not comprised in our operations. I may be permitted, however, to state that these buildings are uninhabitable in their present condition; and as the work cannot be kept from destruction without the presence of some troops, which experience has already shown, it would seem advisable to place the buildings, or a portion of them, in condition for comfortable occupation, although it should be for only a small number of troops.

The work, as regards its defences, is now in a complete state, and perfectly controls one of the avenues to the city of New Orleans—the one followed by the British troops last war; but, without some better protection than a hired fort keeper, will soon fall into dilapidation, as ruinous as that from which it has been recently retreived. On my visit to the work last spring, the fort was found without any occupant.

No further appropriation is asked by this office for repairs.

Tower Duprés, bayou Duprés, Louisiana.—This tower, containing provision for six carronades or howitzers, with a small magazine, together with room for the accommodation of a certain number of men, is entirely complete, as well as the battery for heavy guns at its foot; and it affords ample protection to the bayou at the mouth of which it stands—this bayou being one of the more direct avenues to the city of New Orleans.

The tower, at least, should receive its armament of six carronades or howitzers, and should be garrisoned by a few trusty men—two or three might suffice in time of peace. Some protection of this sort is indispensable, or it will fall into the state of ruin from which it has cost a considerable sum to redeem it. The garrison should be required to keep down the growth of grass and shrubbery on the battery, or this will soon be unserviceable.

No further appropriation is wanted for this work.

Balance in the Treasury on the 30th September, 1843 -	$830 00
To be drawn from the Treasury in the 4th quarter of 1843 -	830 00

Fort Jackson, Mississippi river, Louisiana.—Operations were resumed in March last as soon as means became available, and continued till June, when sickness required a suspension. They will be recommenced in November.

The breast-height wall, and the arched communication leading into the bastions, have been completed; a postern cut through front No. 3; drainage of bastion terrepleins completed; casemates paved, all but three; some pointing has been done, and other slight masonry repairs.

A considerable amount of carpentry has been finished, in addition to a drawbridge which has been made and put up. The glacis coupée has been completed, all but a little grading, and nearly all the surplus earth removed from the bastions.

The sum still available for this work will be applied to completing the embanking, grading, and sodding of the glacis coupée, parapets, banquettes, terrepleins, and ramparts; to revetting with timber the counterscarp of the interior ditch; building sustaining walls for the traverses of the covert way; fitting up the postern casemates, and arranging therein another magazine; regulating the interior of the bastions; paving the floors of the citadel; raising its parade and that of the main work, with some other slight matters. For these purposes, an additional appropriation is required for next year.

Balance in the Treasury on the 30th September, 1843 -	$11,000 00
To be drawn from the Treasury in the 4th quarter of 1843 -	4,000 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - - -	7,000 00
Estimate of the amount required to be appropriated for the half year ending December 31, 1844 - - -	5,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - -	5,000 00

Fort St. Philip, Mississippi river, Louisiana.—The engineer officer in charge of this, with other works near New Orleans, has not found it practicable, during the past year, to apply himself to the repairs of this work; it therefore stands as it did at the date of my report last year; the work still requisite here will, however, be undertaken as soon as the officer can divert a portion of his time from other more important operations.

Balance in the Treasury on the 30th September, 1843 -	$10,000 00
To be drawn from the Treasury in the 4th quarter of 1843 -	2,500 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - - -	7,500 00

No further appropriation is now asked.

Fort Livingston, Grande Terre island, Louisiana.—The appropriation for the year 1842, although very small, was kept back, so that it was necessary to suspend work almost entirely for that year; and it was not until June of the present year that a resumption could be undertaken with any vigor. Since then, work has advanced well, and will continue so to do as long as means avail. In this remote position, it is very necessary to economy, when once labors are organized, to keep the system in motion; and it is earnestly hoped that this small but important fort may now advance steadily to completion. The rear wall of the counterscarp gallery and casemates has been built up to its full height, and also the piers of the reverse casemates, and three feet added to the height of the counterscarp wall; the scarp wall, which before had been raised generally six feet above its foundation, has been raised, on the southwest front, and half of the northwest front, two feet; on the southeast front, eleven feet; and on the northeast front, and the other half of the northwest front, eight feet; two tiers of relieving arches have been constructed on the southeast front; one tier and part of a second upon the northeast, and half of the northwest fronts; 1,721 cubic yards of brick work, and 1,421 of concrete have been laid; and 28,239 cubic yards of earth have been embanked—nearly completing the glacis.

As the imposition of heavy masses of earth on the glacis and rampart had caused settling, and in some instances cracks in the piers and walls, it has been thought advisable to subject, for a time, a portion of the walls and piers, to a heavy load. From observation, on the partial trial already made, it will soon be known whether this process is generally necessary. The nature of the foundation is such, however, that no serious subsidence can take place.

The difficulty of access to this fort, and its distance from all sources of supply, multiply the number, and at the same time augment the amount, of the contingent expenses, making it very important, on the score of economy, that the work should be completed as soon as practicable. It is the opinion of the engineer officer, in which I fully concur, that $55,000 is the least appropriation, for the next fiscal year, consistent with an economical prosecution of the work.

Balance in the Treasury on the 30th September, 1843 -	$27,165 08
To be drawn from the Treasury in the 4th quarter of 1843 -	9,000 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - - - -	18,165 08
Estimate of the amount required to be appropriated for the half year ending December 31, 1844 - - -	35,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - -	20,000 00

Other approaches to the city of New Orleans.—During an examination made in the spring of 1841, of part of the country lying between New Orleans and the Gulf shore, I became informed of at least two avenues to the city that had not been brought within the system of defence, although certainly not less practicable than others which had been fortified. How many more still might exist, was known only to the Spanish fishermen and hunters, who find a living among these obscure and impassable morasses, and whose guidance may be bought, as has been experieneed, even by the enemy. I felt it my duty, accordingly, to bring the subject to the immediate notice of the Secretary of War, and to request that a careful reconnoissance might be made of all the region extending from the easternmost pass into Lake Pontchartrain, round by the shore, to the Atchafalaya, comprising all the practicable passes into the interior. This reconnoissance has been executed in the most satisfactory manner, under the direction of the chief of topographical engineers, by officers of that corps, who are believed to have left no important avenue unexplored, and to exhibit on the maps of their surveys all requisite information.

It will be my duty to lay before you, as soon as they can be prepared, projects of several works indispensable for the defence of the newly discovered approaches. This cannot, however, be done in time to ask for an appropriation at the coming session.

Contingencies of fortification, and incidental expenses attending repairs of fortifications.—The expenditures under these heads have been applied to objects connected with the preservation and efficiency of fortifications which were not provided for by specific grants. There will be a balance under each head which will revert to the surplus fund on the 31st

December next, unless reappropriated, and I have to request that the two balances may be reappropriated under one head, (for the sake of simplyfying accounts,) with a small addition thereto.

Balance in the Treasury of appropriation for contingent expenses, &c., September 30, 1843 - - - - -	$32,296 01
Estimated to be drawn from the Treasury in the 4th quarter of 1843 - - - - - - - - -	14,000 00
Amount liable to revert to surplus fund, December 31, 1843, and required to be reappropriated - - - -	18,296 01
Balance in the Treasury of appropriation for incidental expenses, &c., September 30, 1843 - - - - -	32,474 50
Estimated to be drawn from the Treasury in the 4th quarter of 1843 - - - - - - - - -	13,000 00
Amount liable to revert to surplus fund, December 31, 1843, and required to be reappropriated - - - -	19,474 50
Estimate of amount required to be appropriated for contingent expenses of fortifications for the half year ending December 31, 1844, being a reappropriation of the above amounts of $18,296 01 and $19,474 50 - - - -	37,770 51
Estimate of amount required to be appropriated for the same expenses, for the half year ending June 30, 1845 - -	12,229 49

ROADS, RIVERS, HARBORS, &c.

Pier, dike, and light-house, Goat island, Newport harbor, Rhode Island.—These works were completed in all essential particulars, and turned over to the proper department, for use, many months ago. They appear to fulfil perfectly all the purposes for which they were designed, and will no doubt be found to possess all the strength and permanence promised by the mode of construction and by the quality of material.

No further appropriation will be needed.

Balance in the Treasury on the 30th September, 1843 -	$3,000 00
To be drawn from the Treasury in the 4th quarter of 1843 -	1,000 00
Balance that may revert to the Treasury - - - -	2,000 00

Icebreaker on Staten island, New York harbor.—This work, which before had eleven stone piers, has been extended by operations since May last, to nineteen. The laying of the one additional pier necessary to complete the plan has been delayed by an accident, but will probably be accomplished this year.

No further appropriation is asked for this work, the balance of the appropriation in the hands of the superintending officer being considered adequate to complete.

Closing Hog Island channel, Charleston harbor, S. C.—In my annual report for 1839, there was a recommendation that this channel should be closed, in consequence of its progressively increasing depth, and of accumulations of mud in front of part of the city of Charleston. A report on this subject by the engineer officer superintending in Charleston harbor, made by order of the Secretary of War, will be found in page 114 of Doc. No. 2, 2d session 27th Congress, (papers accompanying the President's message.)

As this is deemed to be an important subject, and the information thereon was collected under this office, it seems my duty again to invite to it the notice of the Government, and to renew the estimate heretofore made for its commencement.

Estimate of amount required to be appropriated for the half year ending December 31, 1844	$25,000 00
Estimate of amount required to be appropriated for the half year ending June 30, 1845	25,000 00

National road.—I beg leave to transfer to this report the observations on this subject contained in my report of last year.

No appropriation having been made for the continuation of the Cumberland road in Ohio, Indiana, and Illinois, since the year 1838, the operations have been entirely suspended, the business closed, and the officers ordered to other stations. Much of the road being left in an unfinished state, it is liable to be washed and worn away; unfinished structures upon the road are exposed to destruction; and the longer the resumption of operations is deferred, the greater must be the cost of final completion.

An estimate is submitted, herewith, for the continuation of the road in each of these States; and, if it be the intention of the Government to prosecute this work, an early appropriation is certainly recommended by every consideration of economy and sound policy.

For more detailed information in relation to the roads, I have the honor to refer to the reports of the officers heretofore in charge, submitted with my annual report of 1841. They will be found in the documents of the House of Representatives, 2d session 27th Congress, document No. 2, pages 117 and 122.

Road in Ohio.—No balance in the Treasury.

Estimate of the amount required to be appropriated for road in Ohio for the half year ending December 31, 1844	$50,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845.	50,000 00

Road in Indiana.—

Balance in the Treasury on the 30th September, 1843	40 00
Balance that may revert to the Treasury	40 00
Estimate of the amount required to be appropriated for the road in Indiana for the half year ending December 31, 1844	75,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845	75,000 00

Road in Illinois.—No balance in the Treasury.

Estimate of the amount required to be appropriated for the road in Illinois, for the half year ending December 31, 1844	75,000 00
Estimate of the amount required to be appropriated for the half year ending June 30, 1845	75,000 00

Arrearages on account of survey for an extension of the National road to Jefferson, Missouri.—This department was called upon, under a resolution of the Senate of January 30, 1839, for an estimate of the cost of extending the National road through the States of Illinois and Missouri, to the city of Jefferson, in Missouri. The preliminary survey of the route necessary to found the estimate upon was made; but there has never been an appropriation to pay for it. It was decided at the Treasury that the funds granted for the road in Illinois were not applicable to this service; and, therefore, the officer who made the survey has ever since stood charged with the whole expense. His accounts have been thoroughly investigated, and the claim recommended by successive committees of the House; still it has, by repeated mishaps, missed the action of Congress. I have therefore included in the annual estimates, an item for the cost of this survey, to which I must call your particular attention.

Estimate for this object for the half year ending December 31, 1844, $1,359 81.

Military Academy at West Point, New York.—In June last, pending the annual examination, I was at this institution between two and three weeks, devoting all my time to the inspection which my official position exacts of me. During this residence, I was careful to visit and examine each department of the academy, looking into every thing with as close a scrutiny as it was in my power to exercise, and it gives me great pleasure to report to you that I found the academy in a condition not less prosperous, and not less fully answering the designs of its establishment, than at any previous period. Discipline, order, and harmony, prevailed throughout, and as perfectly, perhaps, as belongs to human associations. The several courses of study were marked by the thoroughness that characterizes this school. In these courses, though there must be, from year to year, inequalities in the amount of attainment—owing to shades of difference in in the intellects of the successive classes, the general result shows a progressive enlargement; that is to say, there is, from year to year, an increase in the amount or an improvement in the character of the knowledge communicated, resulting from the experience of the institution itself. The fact of this progress is evident, on comparing periods a few years distant from each other; and is a natural result, on the one hand, of the zeal, ability, and devotion, that have been unceasingly applied to the management and instruction, and on the other, of the steady adherence to safe and wise principles. For more than twenty-five years that the institution has been thus rising from its second birth, no change has been grafted on its code of discipline or course of study that has not been the growth of its own experience; and, by the force of this wise and cautious process, it has been continually developing new capacities and new fruits of self-cultivation. By continued adherence to this course, we may confidently look for all the improvement that the future can bring forth. To arrest this natural progress, or with a strong hand to press it into new and untried shapes, at the suggestions of speculation or theory, would surely be an unwise departure from the course of improvement heretofore, with such full success, sanctioned by the Government.

To some recent suggestions from high authority, touching changes in the course, a direction was given by you, in perfect conformity, I was most happy to notice, with this well-approved policy; and the result will probably be the adoption, as soon as can be safely done, (with or without modifications, as the case may be,) of such of those suggestions as may be applicable with reasonable prospect of advantage. In reference to these suggestions, it will be my duty to address to you a separate communication.

Practical military instruction improves now, in some of its branches, more perceptibly from year to year than the academical exercises, for the reason, however, that there is more room for improvement, owing to their comparatively recent introduction. All the branches are at present in a highly creditable state. Nothing has more benefited the practical course than the allowance of a limited number of horses for use in artillery and cavalry drill: without this aid, the artillery drill was languishing and nearly useless, except as to the single piece; and the cavalry drill would, of course, be impracticable. The infantry drill I have never noticed to be more prompt and exact than now.

As to all these branches of practical military instruction, however, the evil would not be very great, were they much less thoroughly taught; it would not, indeed, be irreparable, were they omitted altogether, because these kinds of instruction are well imparted at the regiments and posts. To give this kind of instruction alone, a military academy would not be necessary. But there is another kind of practical military instruction, which is of the highest necessity during peace, and indispensable in war, and which can be acquired only at an establishment where special preparation is made for it, since it cannot exist in the army until it shall have been thus acquired, and is never to be found in civil life. I mean instruction in practical field engineering.

In reference to this branch, I have, impelled by a sense of duty, so frequently laid my views before the War Department in an urgent manner, that it would seem now to be unnecessary to re-adduce the forcible arguments that present themselves. I take leave, therefore, to refer you to my previous communications, especially to a letter to the Secretary of War, page 139, of document No. 2, of papers accompanying the President's message, 27th Congress, 2d session; and, also, to my annual report of last year, page 267, of document No. 1.

One of the printed opinions of the Duke of Wellington, whose urgency while commanding in the Peninsula introduced the present organization of the English corps of sappers and miners, has lately come under my eye, which I will transcribe. It is in a letter of February 11th, 1812, to the Secretary of State: "I would beg leave to suggest to your lordship the expediency of adding to the engineer establishment a corps of sappers and miners. It is inconceivable with what disadvantage we undertake any thing like a siege, for want of assistance of this description. There is no French corps d'armée which has not a battalion of sappers and a company of miners; but *we* are obliged to depend for assistance of this description upon the regiments of the line; and although the men are brave and willing, they want the knowledge and training which are necessary. Many casualties among them consequently occur, and much valuable time is lost, at the most critical period of the siege." The Duke here confines his remarks entirely to the importance of such troops in a siege—one only of many employments for which they alone are instructed.

The proposition to engraft a small body of this kind of force upon our military system, with a view to their employment in time of peace and war, as well as to their aiding in the practical instruction above mentioned, has been, ever since first presented, warmly adopted by the successive heads of the War Department, and by them urged upon Congress; and has been, moreover, repeatedly sanctioned by the Military Committee. I trust confidently to your approval and support, also; and look with much satisfaction at the favorable prospect which would seem to be opening.

Pending the delay of the project, I have made strenuous efforts to introduce into the military school, temporarily, a portion of the desired practice, by the aid of the military detachment stationed there, and also by the aid of soldiers to be ordered to the post for the purpose; but it is enough to say, without any success; and I am convinced that nothing important will be done without the organization of the proposed company of sappers, miners, and pontoniers. The expense of the company for the first year would not certainly exceed the sum of $15,000; and, when entirely complete, with its maximum of one hundred men, paid, clothed, fed, and equipped, would cost $25,935 91 per annum.

It gives me great pleasure to repeat my testimony as to the admirable manner in which the duties of the several functionaries of the academy are performed. Occupying the principal station, and bearing the great load of responsibility, to the superintendent belongs a corresponding share of commendation; but, in addition to his valuable services in the government of the academy, he has devoted much time to local improvements of many kinds, to the increase of accommodation for all grades, and to improvements in the public buildings, producing gratifying and important results with remarkable economy.

With a view to carry out, in a proper manner, the design of Congress in making an appropriation for new barracks for cadets, the subject was referred to and received the deliberate attention of a board of experienced officers, who have had the advantage of conferring with and receiving information on the spot from the superintendent. This officer has himself examined the subject with great care, and proposes a matured project. These, with views derived from other sources, will be presented for your consideration at an early day.

I renew my recommendation that the adjutant of the military academy be put on the same footing as to pay and emoluments as an adjutant of dragoons. The duties of no adjutant in the army are more laborious and responsible.

Balance in the Treasury on the 30th September, 1843 -	$44,315 20
To be drawn from the Treasury in the 4th quarter of 1843 -	10,450 00
To be drawn from the Treasury in the 1st and 2d quarters of 1844 - - - - - - - -	23,865 20
Estimate of the amount required to be appropriated for the half year ending December 31, 1844 - - -	17,839 35
Estimate of the amount required to be appropriated for the half year ending June 30, 1845 - - - -	25,930 35

JOS. G. TOTTEN,
Colonel and Chief Engineer

Hon. James M. Porter,
Secretary of War.

No. 7.

REPORT OF THE CHIEF TOPOGRAPHICAL ENGINEER.

Bureau of Topographical Engineers,
November 1, 1843.

Sir: I have the honor to submit to your consideration the following report, containing a statement of the duties upon which the corps has been engaged since the last annual report, and also furnishing the estimates for the service of the ensuing year.

1. The surveys for the defences of the harbor at the Delaware breakwater, and for the defences of the entrance at Sandy Hook, have been completed, and the drawing and reports, in reference to the same, are now being prepared.

2. The survey for the defence of the town and harbor of Portsmouth, New Hampshire, is still in progress. The extent of country embraced in the survey, and the numerous and minute details which have to be exhibited, necessarily involve much time; and the more so, as it has not been in my power to place more than three officers upon the duty.

3. Surveys for the defence of Amelia island. This is a survey for purposes of fortification, and will be completed in the course of the next season.

4. Officers of the corps have also been, for the greater part of the year, making surveys and reconnoissances, under the direction of General Worth, in Florida, which have resulted in a great improvement of the map of that Territory heretofore published. Nearly the whole of the information so collected has been received at the office, reduced and plotted, and the map is now in such a state of forwardness that it could be made ready for the engraver's hand in about a week.

5. Survey of the Northeastern boundary. Immediately after the treaty of Washington had been negotiated, the honorable Secretary of State applied to the War Department for officers of the corps to survey and locate the line according to the treaty. He desired to have a large detachment from the corps, and, in conformity, a major, a captain, and three lieutenants, were detailed for the duty, upon which they are still engaged.

6. Survey of Albemarle sound, North Carolina. A law of the last session of Congress directed "a survey of the direct communication from Albemarle sound to the Atlantic ocean, with a view to reopen a ship channel." So soon as the necessary arrangements could be made, a captain of the corps was sent upon this duty. He has completed the survey, and also the plan, estimates, and report, which will be submitted to Congress during the coming session, according to established custom in such cases.

7. The military reconnoissance of the peninsula of Maryland, south of the road from this city to Annapolis. This interesting work was suspended during the last year, but will be resumed again in the spring. Its necessity and importance will be duly appreciated, from the reflection that it is the quarter from which Washington was attacked during the last war, and from which it would probably be attacked again, in any future war. It

should therefore be most carefully examined, and the department should be in the possession of reports upon all its military features, its facilities for attack and defence, its weak and strong positions, its physical and moral resources. In fact, similar reconnoissances should be made of all our principal cities, indicating points from which attacks would probably be made, and modes by which they could be successfully opposed. We have already, of nearly all our seaports, surveys of positions for fortifications, and of entrances by water to the several harbors; and the kind of investigations now desirable are those general military reconnoissances embracing the circuit in which an enemy may land, and by surprise or rapid movement lay a city under contribution, and retire with his booty before he could be attacked.

8. The execution of such duties will involve no great expense. The maps of the country are generally sufficiently accurate for them. Extending these to a desired scale, the officer can readily fill up with the topography, and indicate the roads, fords, ferries, bridges, and general character of the watercourses, which, with a report embracing the requisite military reasoning and considerations, would possess a general in command with matter highly essential to whatever military operations he might direct. Gradually to accomplish these objects, and to make such surveys for positions to be fortified as may be required of this office, a small estimate will be submitted, sixteen thousand dollars.

9. Surveys west of the Mississippi. In the last annual report I informed the department that a detachment of the corps was then in the field, upon a survey of the Kanzas and Platte rivers, and that its operations would probably be extended to the Rocky Mountains. It returned in due season, and the report of its commanding officer, Lieutenant Fremont, has been printed, by order of the Senate, and is now before Congress. This report, and the map which accompanies it, will, I hope, be received as evidence of the importance and value of these surveys.

Accurate geographical knowledge is among the most valuable which a country can possess; and, from the observations made by Lieutenant Fremont, and exhibited in his report, we are justified in extending the distance of the Rocky Mountains to about seventy-seven miles further west than former maps have placed them. In the course of his expedition, this officer determined the latitude of sixty-six positions and the longitude of thirty-three. He also determined the height of seventy-four positions, by the barometer; he also collected three hundred and fifty plants of the region in which he travelled, which will be found named in his report. And I deem it but justice to his energy and industry to state, that his report was received and published in less than a year from the day on which he left Washington upon the expedition.

The same officer is now again in that region, upon another similar expedition, from which equally valuable results are anticipated.

10. It is contemplated, in the course of the next season, to have more than one party in this region, and to assign to their operations a thorough examination and determination of the usually travelled route to Santa Fe, as far, probably, as Bent's trading house; from which position, as a point of rendezvous, many places could be accurately determined of the Rocky Mountain range of that vicinity within our territory.

11. These expeditions are unavoidably more costly than our usual surveys. They have to be organized for defence as well as duty, and in a

country in which meat stuffs alone can be counted upon, (and that frequently a precarious dependence.) The equipment has to be adapted to meet all other wants, among which the necessary and customary Indian presents forms no unimportant part. For the continuation of these surveys, twenty thousand dollars is submitted.

12. The map of the country north of the Missouri and west of the Mississippi, upon which Mr. Nicollet had been employed, has been duly completed. In conformity with the directions of the Senate, three hundred copies of the one on the large scale have been published; and the reduced map, to accompany the report, is now in the engraver's hands, and will be ready to be issued with the report.

13. The protracted ill health of this highly gifted and amiable man, which terminated fatally in September last, infused some delay in the preparation of his report, which had, in the end, to be put in the printer's hands before it had received the finishing touch from its author.

14. He had contemplated a vast design, which would have required many years of labor, from a more robust frame than he possessed, properly to have consummated; and the report, which will now be printed, may be considered rather as an imperfect sketch of a part only of his views. Fully to have described the physical geography of that extensive country would of itself require a volume; its botany, another; its geology, a third. And when to these we add the vast number of geographical positions determined by him during the five years he was in the field, and of heights determined by the barometer, it may be truly said that he had contemplated, if he has not accomplished, a herculean task.

15. Under the authority of the War Department, he was furnished with such assistance as he desired, in copying, making his drawings, and in making his astronomical and barometrical calculations. And, in order to save him all labor, as well as all anxiety on that head, the map for his report was was reduced, re-compiled, and drawn in the bureau.

16. But these remarks do not give an adequate idea of all the objects to which his attention had been directed. We find among his papers voluminous notes, (in French,) upon the history, traditions, customs, superstitions, religion, laws, music, and languages, of the Indian tribes which he found residing within the limits of his map. All these he intended to digest, reduce to form, and to make them parts of his report, if health and life had been allowed to him. And when, to his profoundly thinking and philosophical mind, it is considered that his notes are the results of his personal observations, and that his knowledge of the prevailing language among the tribes he visited enabled him to correct the ignorance and errors of an interpreter, there can be no doubt that the report he contemplated would have been full of interest, philosophy, and truth.

17. But although these notes were not prepared for publication by their lamented author, they are yet not so imperfect that an intelligent mind cannot put them into proper shape; and as they were collected by him while in the service of the United States, and were intended to form a part of the report of his public labors, they have somewhat the aspect of public property, and have a claim upon as much of public patronage as may be necessary to bring them out. They will probably make, if printed about two hundred pages, of the usual size of Congress documents. A few weeks before he died, he deposited these notes with a friend, giving to him a discretion over them. This friend has already expressed to me his readiness

to prepare them for publication, and, in conformity with your approbation, he is now employed upon the duty.

18. The subjects of these notes are those in reference to which the literary and philosophical portions of the world are now full of active curiosity; and as it was in the employ of the United States that the investigations were made, it seems to me, as due to the United States, that they should possess whatever reputation will attach to making them public.

19. Survey of the lakes. The officer in charge of this duty has been so long and so constantly in the field, upon the work, that he has not yet furnished the usual account of his operations for the season. These are known, however, to have been extensive; and no doubt is entertained that the progress of the work has been fully commensurate to the time and numbers devoted to it. In the absence of such account, I will endeavor, briefly, to expose, to the honorable Secretary, the general views under which the work is conducted.

20. There is but one sound principle which can be admitted as a governing principle in works of this kind—namely, to extend over the lakes, as far as practicable, a chain of triangles; then to connect this chain, where the lake is too wide, by series of smaller triangles, along the shore. Any other principle, except for a temporary approximate result, would be at variance with the received practice of all nations, and with methods known to yield the most accurate and the most prompt results, and also the most economical under proper management.

21. This method dates as far back as 1617, when Willebrod Snell applied it to the survey of Holland. It has been the method invariably pursued since, for such purposes, and for the determinations of arcs of the meridian, whenever an accuracy becoming the science of the age was the aim.

22. The method has, of course, experienced great improvements in modes of calculating, corrections of calculations, and in the kind and quality of the instruments used.

It is now the method pursued in the survey of Great Britain, at present going on, and is also the general method of the survey of the coast.

23. Our operations upon the lakes have, of necessity, to be varied according to the configuration of the country, the width of the lakes, and the power of instruments. The lakes are extremely broad in places, and have nowhere a mountain border capable of commanding very distant views. The idea, therefore, of a primary triangulation of large triangles throughout their extent, is one which cannot be sustained; and we are, in consequence, from a necessity which nature imposes, obliged to combine with the primary triangles a series of smaller ones, throughout parts of the lake coast.

24. Commencing at the southern extremity of Lake Michigan, and going northwardly, it is very evident, from the width of the lake, and from its low flat shores, that no series of triangles can be thrown across this lake, until arriving as far north as the Manitoo islands. At this vicinity, and with the aid of the Beaver islands, series of triangles may be made, to connect the two shores of the lake, and may be carried northeastwardly through the straits of Mackinac, and possibly as far into Lake Huron as a series of islands called the Ducks, on the northern shore, and a promontory of the coast on the southern shore.

25. This series of triangles may also be extended north and west, so as

to establish a connexion with Lake Superior, and embrace the eastern extremity of that lake.

26. Proceeding again to Lake Huron, a hiatus in the triangulation across the lakes will have to take place; and it is barely probable that the series may be again commenced and be established, between the two shores, south and near Saginaw bay, and from thence be continued down to Fort Gratiot.

27. From Fort Gratiot to Lake St. Clair, the connexion is without difficulty; and the whole of Lake St. Clair may fairly be considered as within the control of good instruments. From Lake St. Clair, the connexion with Lake Erie is by the straits of Detroit; and the western end of Lake Erie, so far as Point au Playe on the northern, and the mouth of Vermilion or Black river on the southern shore, may also be considered within the limits of a triangulation. Should this prove to be the case, it will enable the officer on that duty to have a regular series of triangles across the lakes and straits, from the vicinity of Saginaw bay to the localities just stated, upon Lake Erie.

28. There will now again have to be a hiatus in the triangulation across the lakes; because proceeding eastwardly upon Lake Erie, the shores do not approximate sufficiently for operations of that kind, until arriving at Long point, on the northern shore, and the vicinity of Burgett's town, or Portland, on the southern; from whence the work can be continued, to establish the connexion with the western end of Lake Ontario. This last lake widens so rapidly from each end, and its shores are so distant from each other, that it may be considered impracticable to extend a triangulation over it.

29. Lake Champlain is completely within the power of good instruments, and presents no difficulties of the kind referred to.

30. The hiatus in the main triangulation, which have been noted, will have to be filled up with a series of small triangles along the shore.

31. These general views expose the system which will have to be pursued, and embrace what properly constitutes the geodetic part of the survey; they constitute also the system upon which the operations already made have been conducted.

32. The details of the shore, (within our own limits,) and of the several harbors not yet surveyed, will be obtained in the usual manner, and need no particular exposition.

33. It will be perceived that the plan indicated will oblige us, at times, to seek a triangle point upon the shores of a foreign Power. But, in this matter, no difficulty is apprehended; as, in the surveys which have already been made, we have universally met with the greatest courtesy and civility on the part of the British officers, and with their consent have operated, on making known our wishes. Nor is it doubted, that, if in all cases our object is previously made known to the commanding officers and authorities, we shall be less fortunate hereafter.

34. We want, upon the foreign coast referred to, merely triangle or geographical points; as we never have made, nor do we mean to attempt, any detail surveys on that coast.

35. The survey, by the British, of their part of the lake coast, has been pushed forward with great activity and intelligence; and we have now, in this office, as many as thirty sheets of engraved maps, the results of their operations.

36. For the continuation of the lake surveys, the sum of twenty thousand dollars is submitted.

37. There was an appropriation of $10,000 made during the last session of Congress for "rebuilding the beacon of Black Rock, Connecticut." It had been three times overthrown, and the honorable Secretary of the Treasury, in whose department the superintendence of light-houses and beacons is placed, applied to the War Department to have the "rebuilding" directed by the law placed under the superintendence of this bureau. When at the head of the War Department, he had become satisfied with the advantages and economy of the adoption, for such structures in suitable localities, of the principles of Mitchell's patent screw moorings, and had approved of the recommendation of this bureau to use that principle for the light-house at Flynn's Knoll, a work which had been placed under the direction of the bureau. But no appropriation for that work having been obtained, he considered that the rebuilding of the Black Rock beacon offered a good opportunity to try the plan; and as the plan had been carefully studied by the bureau, he desired that the work should be placed under it. The application being approved by the War Department, Captain W. H. Swift, who, when in Europe, had made the structures on this principle objects of his particular attention, was ordered to superintend the rebuilding of this beacon. His report upon the subject, full of interesting details, is hereto appended.

38. The screw-pile light involves two important principles: 1st, the manner in which the pile is imbedded in the soil; and, 2d, the comparative absence of all resistance to the wave by the superstructure. The locality of the Black Rock ledge admitted only of an application of the second.

39. It is now completed entirely of wrought iron, and at a cost of less than $5,000. It was not more than three days after it was completed when the severe storm occurred in the sound, (early in October,) which disabled so many steamboats, and drove the light-boat from its moorings, near Bartlett's reef. The beacon stood the trial of this storm without the least injury.

40. Improvement of the Red river. From the last report of the superintending engineer, the contractor for this work is zealously and faithfully attending to it, and the river is represented as being in good boating order.

41. Repairs of the Potomac Bridge. This work has been completed, and the control of it placed in the hands of the Commissioner of Public Buildings. It experienced some delays in consequence of the discontents of the citizens of Georgetown at the position of the draw, which were not adjusted to their satisfaction without a legal investigation, during the course of which the work was suspended. It also experienced delays from the unusual and frequent freshets of the season—the last, during the month of September, exceeding any known freshet for many years. During its continuance, the drift wood, not being able to escape through the pile work of the old part of the bridge, lodged against it in vast quantities, forming a compact raft, and in fact a complete dam, obstructing all passing of the water, except between the piers of the new work. This, of consequence, forced the whole mighty mass of moving water between these piers, violently eroding the river bottom. They all withstood the shock without injury, except one, which, having been placed the season before, and having withstood the freshets of the previous winter and spring, was considered among the most secure of the structure. But in consequence

of the raft obstruction before spoken of, and of the mass of water which was thrown through the part which kept open, about thirteen feet of soil was washed out from beneath this pier, occasioning it to sink considerably and unequally. The bridge, however, was but slightly affected by it, as, from the mode of construction, it is sustained by piles, independent of the pier, the pier structure being for the purpose of protecting the piles by which the bridge is sustained. Such an accident could not well have been anticipated: that a place which had not more than seven feet of water for years, and where a pier, loaded with quantities of stone, had settled and remained immovable for more than a year, should suddenly have thirteen feet of mud swept out from under it, the depth of water being changed from seven to twenty feet. It is no bad compliment, however, to the work, that the new work should have stood this violent shock without for a moment having the passing over the bridge interrupted; and it shows that the piles upon which it rests were driven to an unyielding bottom, as these did not sink with the crib or pier. As soon as the condition of this crib was ascertained, great quantities of stone were thrown around it, to secure it. It is now firm and safe, although distorted and unsightly.

42. It had been contemplated, in the first instance, to take up about one hundred and thirty feet of the old bridge, immediately adjacent to and east of the former rupture, as to that extent it had been much injured and weakened, and to replace it by an additional pier and bridge span, upon the plan of the repairs. But the time which had been lost from various causes, as before stated, and the extreme anxiety to bring the bridge into use, induced us to use that part of the old bridge. But the timbers for the proposed additional span have been prepared, and the additional pier framed; they are now ready for use at any future period.

43. These circumstances have occasioned the expenses for the repairs to exceed the appropriation by a small amount, for which an estimate is submitted.

44. The old bridge is low, and upon piles within twenty-five feet of each other. The part repaired is more elevated, and rests upon piers giving a water way between each of one hundred and twenty feet. Much of the old bridge yet remains, but, from its plan, it furnishes no adequate water way for the passage of ice and drift wood in times of freshets. In consequence, the drift and ice pack against the old part of the bridge, partially if not completely obstructing the passage of the water—forming a species of dam, which, with the causeway, extends, at such times, over more than half of the river, forcing the flood with accumulated violence through the western and eastern channels, gouging out the bottom immediately under the bridge, without benefit to the channel above or below, thereby endangering the bridge and producing no good. In addition, the old parts of the bridge are much decayed, requiring frequent repairs, and were so injured by the pressure and concussion of the drift from the freshet of last September, that it is doubted if parts of it will withstand another similar trial. Under these considerations, it is respectfully suggested that the whole of the old bridge (except the causeway part) should be removed, and be replaced upon a plan similar to that of the late repairs: that is, the floor to be raised as high as that of the repairs, and the water way between the piers to be as great.

45. I will also state that structures of this kind are liable to accident and to decay, which, if immediately attended to, are remedied with but little

cost, but if neglected become serious breaches, requiring costly repairs, interrupting for the time being the use of the bridge. There should be, therefore, a contingent fund always at the disposal of some agent, to be applied as required, or a toll should be exacted sufficient to keep up the requisite repairs.

46. The bridge also stands in need of the protection of law against wilful injuries, and against rapid driving over it. There is scarcely a bridge of any extent in our country which is not protected in that way. And while I am willing to yield, generally, to those who pass over this the merit of correct conduct, yet, from the experience while the repairs were being made, I am disposed to think that such protection as has been indicated would not be without beneficial effects.

47. Improvement of the Ohio, Mississippi, Missouri, and Arkansas rivers. The appropriation for these rivers is in one sum, but it has been found expedient to divide the duty into two distinct commands, namely: the Ohio above the falls at Louisville as one; the falls and the Ohio below, and the Mississippi, Missouri, and Arkansas, as the other. This division was occasioned by specific differences in the character of the Ohio above the falls and that of the Ohio at the falls and below, and of the other rivers named, which differences call for a different system of improvement, and the employment of different kinds of boats and machinery. I shall therefore treat of the operations under this appropriation under the two heads just stated.

48. Of the Ohio at the falls and below, and of the Mississippi, the Missouri, and the Arkansas. In conformity with a resolution of the Senate of the last session, a survey has been made of the falls at Louisville, with a view of presenting a plan for their improvement; but, as the report and estimate have not yet been received, they cannot form a part of this report, but will be presented as soon as received, which will be, without doubt, in time for any action of Congress during the present session.

49. The report of operations upon the Ohio below the falls, and upon the Mississippi, the Missouri, and the Arkansas, is hereto annexed. As this is the first report in reference to these rivers since the appropriation of 1842, and as it goes into many interesting details, it is considered desirable to attach the whole as an appendix.

50. The first appropriation for the improvement of these rivers since the suspension of the work in 1838 was in August, 1842, when an amount of one hundred thousand dollars was appropriated. During the last session of Congress, two additional appropriations were made—one for the half year ending the 30th of June, 1843, of fifty thousand dollars; and the other of one hundred thousand dollars, to embrace the new fiscal year ending on the last of June, 1844—making a total of two hundred and fifty thousand dollars.

51. Of the amounts appropriated, there has been drawn from the Treasury, up to the 1st day of November, 1843, the sum of one hundred and sixty thousand five hundred and eighty-eight dollars, leaving, on that day, an unexpended balance of eighty-nine thousand four hundred and twelve dollars. To this balance should be added a small amount of five thousand seven hundred and forty-four dollars, refunded by the former to the present agent—making the total balance applicable to the work, until the 30th day of next June, ninety-five thousand one hundred and fifty-six dollars.

52. The wants of the service up to that period are estimated to require

about one hundred and seventeen thousand dollars; and as the balance in the Treasury and other available means are not more than ninety-five thousand one hundred and fifty-six dollars, it will be seen that this balance will be fully exhausted before the appropriations for the ensuing year can be made and become available.

53. But, as before remarked, the work upon these rivers was divided into two commands, which made it necessary to apportion the amount appropriated, that each officer, being aware of the amount at his disposal, could govern his operations accordingly. At first it was decided to assign fifty thousand dollars to the Ohio above the falls; but from the representations of the officer superintending that division of the work, that this amount would not cover the extent of work which could be advantageously accomplished this fall, the amount was increased to sixty-five thousand dollars.

54. Of the Ohio below the falls. The improvement of this part of the river consists of the removal of snags and sunken logs from its channel, and in the construction of wing dams and jettees, in order to concentrate the water to a single narrow, and consequently deeper, channel over the shoals. Many snags and logs have been removed, but, as yet, no dams have been constructed since the appropriation of August, 1842. Under former appropriations, some dams were erected in this part, which, it is said, have produced very beneficial effects; but, from the omission of timely repairs, and from those causes which expose these and all similar structures to injury, the dams are somewhat dilapidated. Careful examinations of them are now being made, which will not merely give data for the most effective repairs, but will also furnish the most valuable information to guide in the plans and materials for other similar structures.

55. The Mississippi river. From New Orleans to the mouth of the Missouri is about twelve hundred miles. The obstructions to navigation in this distance may be considered as consisting entirely of snags, sunken logs, stumps, trees, and wrecks, as its worst low-water stage may be fairly stated as equal to four and a half feet. Our attention to this part of the river has been directed to the removal of the obstructions just named.

56. From the mouth of the Missouri to that of the St. Peter's, a distance of about six hundred and fifty miles, the river assumes a different character. In this distance, shoals, in the form of sand bars, are occasionally met with; and there are two remarkable rapids over ledges of rock, known as the Des Moines and Rock Island rapids; yet, during about eight months of the year, the river is navigable over these rapids to the St. Peter's, and above for steamboats of about one hundred and fifty tons. Operations have not been extended to this part of the river since the appropriation of August, 1842. A few years since these two rapids were carefully surveyed, and plans and estimates for their improvement submitted; special appropriations in their favor were also made, and the work begun, but suspended because of the omission of the appropriations before any very serious impression was made upon the obstructions.

57. The Missouri river. The appropriation of August, 1842, was the second in which the attention of Government seems to have been seriously turned towards this highly important river. With all existing obstructions, from snags, sawyers, rafts, sunken logs, impending trees, bars, &c., this river has been passed by steamboats up to the Yellowstone, a distance of about one thousand eight hundred miles. It is stated, that during favora-

ble seasons, boats drawing four feet water can ascend that far; and during those parts of the season the least favorable to navigation, boats drawing two feet water may ascend to Council Bluffs, about six hundred miles from its mouth.

58. As soon as the condition of the river was favorable for the work, one of the new snag boats was employed upon it.

59. The Arkansas river. This river may be considered as possessing a sufficient depth of water for steamboat navigation for about six hundred miles from its mouth. The obstructions to its navigation consist of bars, shoals, snags, and impending trees; our efforts to improve it have, as yet, been confined to these two last.

60. In addition to these operations upon the rivers named, the two old snag boats have been repaired, two new ones have been built, and a machine boat is now being built at Cincinnati. That the service of these boats may be judged of, I subjoin a return of the labor performed by each.

61. *Statement of snags, trees, &c., removed from the channels and banks of the Western rivers since the commencement of operations on the 14th November, 1842.*

From what rivers removed.	By what boats removed.	Snags and logs removed.	Trees felled.	Roots cut under the banks.	Sunken b'ts removed.	When removed.
Mississippi	Archimedes	357	–	–	–	Nov., 1842.
Do.	Helepolis	76	86	–	–	Dec., 1842.
Do.	Archimedes	130	4	–	1	
Do.	Helepolis	278	921	–	–	Jan., 1843.
Do.	Archimedes	222	942	–	–	
Do.	Helepolis	208	3,369	–	–	Feb., 1843.
Do.	Archimedes	243	205	–	–	
Do.	Helepolis	195	–	–	–	March, 1843.
Do.	Archimedes	208	359	–	–	
Do.	Helepolis	74	95	–	–	April, 1843.
Do.	Archimedes	88	–	–	–	
Ohio and Arkansas	Sevier	114	14	–	–	July, 1843.
Ohio and Mississippi	Samson	153	4	–	–	
Mississippi	Helepolis	130	465	–	–	Aug., 1843.
Do.	Archimedes	158	533	181	–	
Arkansas	Sevier	409	6	–	–	
Missouri	Samson	607	102	–	–	
Mississippi	Archimedes	164	2,254	288	–	Sept., 1843.
Do.	Helepolis	184	1,660	–	–	
Arkansas and Mississippi	Sevier	272	130	–	–	
Missouri	Samson	513	–	–	–	
Total	–	4,783	11,149	469	1	

62. From this table it will be seen that four thousand seven hundred and eighty-three snags have been removed, eleven thousand one hundred and forty-nine impending and threatening trees have been felled, four hundred and sixty-nine roots removed from under the river banks, and one wreck has been raised.

63. In making out the estimates for the ensuing year I have been governed by considerations which occasion a slight difference between that

estimate and the one furnished by the superintending officer. Differences of this kind are not unfrequent; they arise from the difference of views which exist between the officer in charge of a particular work and the judgment of the department, the views of which extend to every work under its control. It is occasionally deemed expedient to anticipate a greater or a less activity, a greater or a less extent of operations, than is anticipated by the officer in charge of the work, and a greater or less amount than he requires is, in consequence, occasionally required by the department. In the present case, Lieutenant Colonel Long does not, in his estimate, appear to have anticipated the use of more than one snag boat on the Missouri; but when the great importance of that river is considered, the vast and rapid increase of its travel and its trade within a few years, its great length, and its intimate connexion with the defence of the Rocky Mountain frontier, it is considered as requiring more active amelioration than can be accomplished by one boat. The physical condition of the river also requires a boat of a different construction, of a lighter draught, from about Fort Leavenworth, and above, to the kind of boat adopted below that position. Accordingly, the estimate submitted with this report provides for the construction and use of one more snag boat than is anticipated in the estimate of Lieutenant Colonel Long.

64. There has also been excluded from the estimate of the bureau several items in the estimate of Lieutenant Colonel Long for expenses of surveys on the Tennessee river. These could not be introduced in an estimate under the head of the appropriation which neither mentions that river, nor contemplates operations upon it. They belong to a different, and, comparatively, a new subject, and cannot, by any justness of reasoning, be involved in an estimate for the "Ohio, the Mississippi, the Missouri, and the Arkansas." Nor could any part of an appropriation, under that heading, whatever might be its amount, be expended upon any operation upon the Tennessee.

65. Admitting to its fullest extent, which I readily do, the great importance of the commerce of that river, and the necessity and feasibility of improving its navigation, yet, in conformity with long-established usage, an item in reference to it cannot be introduced in the estimates of this office without some previous intimation to that effect from Congress, or without the orders of the department.

66. Similar remarks apply to the Rock River and Des Moines rapids of the Mississippi. But as these are parts of the Mississippi, and intimately connected with its improvement, and as the improvement of that river is a direction of existing laws, the estimate will embrace the items for additional investigation of those passes, but it does not embrace any thing for their improvement. There can be no doubt of the necessity that these passes should be improved, but the time when they shall be attended to, and the amounts which shall be appropriated in the first instance, are left for the direction of Congress.

67. Much desirable information on the subject will be found in the report of Lieutenant Colonel Long, and the bureau is always ready to furnish more, and to render such estimates in detail as may be required of it. Under these views, the estimate for the Ohio below the falls, and the Mississippi, the Missouri, and the Arkansas, for the service of the year commencing the 1st of July, 1844, and ending the 30th of June, 1845, has been made out, amounting to $249,400.

68. The harbor of St. Louis. Special investigations are now bein
in reference to this harbor, but they have not yet been completed.
plans and estimates on this subject are already before Congress, and
priations have been made and expended upon the work. As the
be no doubt that the investigations now being made will result in
timate of some amount, and as the first season of the renewal of a
always one of a comparatively small expenditure, I have submitted,
present estimate, for your consideration, no greater sum than $30,00

69. The first surveys in reference to this harbor were made by Li
ant (now Captain) R. E. Lee, in 1837, and the plan which was adopt
the result of his investigations. This plan contemplated the constr
of a dam from the head of Bloody island to the Illinois shore; a reve
of brush and stone, for the protection of the eastern shore of this i
and a long dike, or jettee, extending from the lower part of the i
downward, and nearly parallel to the St. Louis shore. The total a
of Captain Lee's estimate was $158,554.

70. A sketch of the harbor, which accompanies this report, will
the honorable Secretary the better to understand the plan which wa
posed, and the following remarks upon it from Lieutenant Colonel L

71. "Of these structures, the dike and the escarpment have been
pleted, but to what extent, or at what cost, either respectively or collect
I am not able to state.

"The dam has never been constructed; but, as a substitute, a
hedge work, composed of piles, small trees, saplings, bushes, &c., wa
menced at the foot of an island near the Illinois shore, nearly a mile
half above the head of Bloody island, and carried downward a cons
ble distance in a direction to strike the head of Bloody island.

"The object both of the dam and of the hedge work was to dive
water from its passage downward between Bloody island and the Il
shore, which has not yet been accomplished. On the contrary, the Il
channel seems to be constantly enlarging, both in width and depth, by
nual abrasions of the Illinois shore, and by the increasing force of the
rent on this side of the river, which sweeps the detritus from the botto
the channel.

"By the aid of the accompanying diagram, which has been compile
a reduced scale from the map of Captain Lee, we shall be able to exp
more clearly the condition of the Mississippi at and near St. Louis; the
sitions of its channels, bars, &c.; and, at the same time, afford an illu
tion of the views entertained in regard to the method of improvement
calculated to subserve the exigencies of the case.

"The broad part of the river, situated between the foot of the islan
A and the head of Bloody island at B, presents an extensive bar of lo
sand, across which the low-water volume flows in a broad and compa
tively thin sheet, and enters the channel between Bloody island and the
linois shore. The quantity of water that now flows on this side of
river is thought to be very considerably larger, especially in a high st
than that passing in the Missouri channel. Formerly, the main bo
of the river, in all stages, passed between the island and the Misso
shore—the channel on this side being about a quarter of a mile w
and twelve to twenty, and in some instances thirty, feet deep, in the low
stage of water. The extensive bar above mentioned is annually spread
towards the Missouri shore, and, at the distance of about a mile above

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main landing at St. Louis, has already approached so near that the space occupied by the present channel on that side is quite narrow. I have been credibly informed that the depth of water in it during the very low stage that occurred in November last was scarcely sufficient for the passage of boats drawing four feet.

"The line of hedge work substituted for the dam across the Illinois channel was to extend from A towards B, but was to be interrupted about midway of its course in such a manner as to leave a free passage for the boats plying across the upper ferry at St. Louis.

"The escarpment of stone and bushes has been formed on the right side of Bloody island, extending from C to D. This work, whether beneficial or otherwise, has undoubtedly served to protect the island against the abrasions of the current.

"The dike at the lower extremity of the island is represented by the line E F. Among the results to be witnessed in its neighborhood is the prolongation of the island downward through the whole extent of the dike. Whether this result has been produced in whole or in part by the dike, or by the ordinary action of the currents, may be regarded as a question of difficult solution.

"The dam, from B to G, as before remarked, has never been constructed. The width of the channel, in the direction of the dam, has evidently been much increased, by abrasion upon the Illinois shore, since the date of its projection.

"Improvements are required at this place for preserving and protecting the harbor, rather than for the purpose of affording safety and facility to the navigation of the river. The obvious tendency of the river is to open for itself a channel on the Illinois side, and, eventually, to fill with alluvion, and to desert, the Missouri channel, which constitutes the harbor. Accordingly, the adoption of measures calculated to counteract and prevent so baneful a catastrophe becomes an object of incalculable importance, not merely to the commerce of St. Louis, but to that of the West generally."

72. It is a subject of extreme interest to investigate thoroughly the changes which have taken place in this harbor since these works have been made, and to study with great care the effects which have been produced by them. In that way, data deserving of the greatest confidence, and upon which [to base] judicious plans for future operations, are only to be obtained.

73. For many years, the river at this locality has been gradually working out for itself a channel on the Illinois side, to the injury of that on the Missouri side; and if this process is not interrupted, it will eventuate in the destruction of the present harbor and landing of St. Louis. It was to prevent so lamentable a catastrophe that the surveys and plans of 1837, and the consequent operations, were projected. These were unfortunately interrupted in 1839 by the omission to make appropriations for them; and one can now only conjecture what would have been the results, if the plans proposed and modified, as effects were observed, had been steadily persevered in.

74. Our course at present is carefully to study existing conditions and effects of the incomplete works, and to present plans for the completion of the same, or of such modifications as would probably have suggested themselves to the able officer who was then in charge of the work. The subject is one of the greatest importance, involving vast facilities to the trade

of the Mississippi, and an immense amount of property, and one, also, which does not admit of much longer delay.

75. Of the Ohio above the falls. As the report received upon this work is also the first since the appropriation of August, 1842, except a report from Captain Hughes, indicating the condition of the river, and plans for its improvement, which was submitted to Congress during the last session, I have considered it advisable to attach it as an appendix (No. 2) to this. It is also a report full of interest, embracing those condensed historical views so essential to a clear understanding of the subject, and which renders unnecessary a similar exposition on the part of the bureau. As Captain Sanders justly remarks, "there can be no diversity of opinion as to the propriety of removing snags, rocks, and such like obstructions, though there may be some choice in the means employed; but plans for deepening the channel and regulating its direction are fruitful sources of clashing views." And he has, with much propriety, devoted the greater part of his report to these last considerations.

76. The distance from Pittsburg to "the falls" is about six hundred miles, and constitutes the division now under the superintendence of Captain Sanders. The object of the improvement is to furnish a continuous navigation, during low stages of water, for boats of light draught; and the most that is anticipated is, that there shall be at no time over any of the numerous shoals between Pittsburg and the falls a less depth than from twenty-four to thirty inches. Such a result can be obtained only by concentrating the water, during its lowest stages, into one channel; to accomplish which, is the problem to be solved. The means are the combined or single action, as the case may require, of wing dams, jettees, and excavations. The length and height of these dams, their direction, and the materials of which they should be constructed, depend entirely upon localities and the judgment of the engineer. The great working element is the stream itself, and the great study of the engineer is to give to this element the direction, force, and assistance, adapted to produce the desired results.

77. The methods of operating on this river are by contract and by hired labor. The construction and repair of dams, and the procuring of materials, are matters of contract; but the removal of snags and rocks in the channel is done by persons employed under an efficient master workman. This last cannot well be matter of contract, as its proper execution requires not only that snags and obstructions should be removed, but that they should be diligently sought after, in order to be removed. No previous inspection would give that accurate knowledge of the bottom which would enable an agent to specify, in a contract, all that should be done; and no after inspection could well be made sufficiently minute to determine that all which had been required had been done. Such work can be well executed only by proper machinery and hired labor, under a vigilant master workman; with whom, there being no interest to slight the work, there would be no inducement to pass by difficult or recently discovered obstructions.

78. And in general, even in reference to the construction of dams, and of all other works, my own experience and judgment are in favor of contracting only for the materials, and of putting them together by hired labor. Materials are easily inspected in a loose state, and being inspected at places of delivery and use, contractors for them would rarely bring such as would

be rejected; and upon which, in consequence, they would lose all the expenses of carrying to and away from the work. The great point is the manner in which materials are put together; in other words, the construction of a work. If this be well done, even with materials of inferior quality, good results can be obtained; if it be badly done, even with the best materials, the result cannot fail to be disgraceful to the superintending officer, and wasteful of the expenditure. Now, if a contractor construct as well as an intelligent officer, with hired labor, it will cost him as much, and he can realize no profit, unless at a price greater than the work would cost under an officer and with hired labor. But, if he realize a profit from the construction without an enhanced price, it must be either at the expense of the work, or that he can procure labor at a less rate than the officer, or that he can get more work out of his laborers. Now, the first should certainly be carefully avoided, as it would be no difficult matter to prove that works of a certain character, badly constructed, are dear at any cost. The second is hardly probable, as the United States is as good a paymaster as a contractor. And the third is a benefit to the contractor, at the expense of the laborer.

79. The great economy in all public as well as private constructions is in the skilful and faithful execution of the work; and the system which ensures such a result, even at a slight increase of cost, is undoubtedly the best to be pursued. Good work can no doubt be obtained from contractors, if an adequate price be allowed, and if a system of unremitting supervision be adopted. But such a supervision will require the employ of many well-qualified persons, at suitable compensations; and although these compensations are not paid to the contractor, and therefore no part of the contract price for the work, yet they are necessarily part of its cost, and should be taken into the account in all statements of its cost.

80. Adequate price is rarely to be expected by a contractor, under the system of giving contracts to the lowest bidder; and the clamor which would be raised were any other system adopted, scarcely leaves the hope that a different course could be pursued. It is therefore, I think, the safer way to contract only for materials, and to put them together, under suitable superintendents and master workmen, with hired labor. In this way, good work will always be obtained, even if it should be apparently at a higher price than by contract. It is, however, in reality, cheaper, as such work will not require annually, under the delusive head of repairs, expenditures which, in a few years, equal the original cost.

81. It was at first determined to assign no more than fifty thousand dollars to the Ohio above the falls, but, on representation of the superintending officer that this amount would not enable him to do as much work as could be done advantageously this season, it was increased to sixty-five thousand dollars. I beg leave to state, that this proportion of the appropriation was not assumed from any consideration of comparative merit or necessity of the works on that part of the Ohio, or in reference to the amount of labor required there, but merely from the consideration that, during the first working season since the appropriation, not more than that amount could be advantageously expended upon this part of the river.

82. In addition to the machinery and boats which the works require, expenditures have been made at—

83. First, White's ripple and Wollery's trap. The old dam has been repaired; a new dam projected, and now being made, extending from the

left shore; also, a low wing dam, to form a low-water boundary to the channel; and the channel is also being enlarged by the steam scrape boat. *This* work is one of great professional as well as commercial interest, as *all the* various means adopted for the improvement of the shoals of this river have to be combined for its benefit.

84. The superintending engineer makes an interesting remark in relation to securing these dams from ice and drift, as resulting from his experience, namely, "that there is no greater security against injuries from ice and drift than finishing the dam with small stone, brought to a regular macadamized surface."

85. Second, Deadman's island. The operation at this point is to remove an old wing dam and to excavate a new channel on the right shore.

86. Third, Beaver shoals. At this point, the work consists in excavating the rock from the bed of the channel. This is a work of blasting under water. As much as two hundred and fifty cubic yards of solid rock had been removed by the latter part of August. And the same party of laborers had also removed from the line of the channel three large trees with roots, forty blocks of stone, averaging twenty cubic feet each, and about one hundred and fifty cubic yards of small stone.

87. Black's island. A dam is being made here, for stopping the passage to the right of the island, and for concentrating the water in the channel. This work is under contract, and is progressing very satisfactorily.

88. Brown's island. The former dam is being repaired. It is reported as being very solid and tight, and as already turning nearly all the water of the river, in its dry stages, into the desired channel.

89. Mingo island. The stone is being collected for the construction of the dam at this island, the object of which is to close the passage on the left of the island.

90. Captina island. Here the work is, to repair a dam. One had been constructed, but left unfinished when these works were suspended. It had been seriously injured—stone from the top rolled off, and one complete breach through it.

91. Fish Creek island. The object at this place is to obstruct the passage to the left of the island. It is a new work. The stone for the dam had already been quarried; much of it had already been transported to the place, and it was expected that the dam would certainly be finished during the month of November.

92. Petticoat ripple. This is considered one of the most difficult shoals to pass of the entire river. It requires two wing dams, one from each shore, in order to concentrate the water in the channel. The dams are nearly completed, and already an increased depth in the channel is observed.

93. Marietta island. The effort here is to cut away a sand bar which obstructs the entrance to the Muskingum, by extending the jettee from the foot of the island. The effects of the work are not yet sufficiently known.

94. Blannerhassett's island. The works here are to stop the passages to the left of the island, and between the island and towhead at its foot. The dam at the latter place has been built, and its happy influence, in the depth of water over the bar, was immediately experienced.

95. Buffington's island. A wing dam is being made at this place, in order to concentrate the water in the passage to the left of the island.

96. In his estimate for the ensuing fiscal year, viz: from the 1st of July

1844, to the 30th of June 1845, Captain Sanders divides as much of the Ohio as constitutes his command into four different sections; for each of which he names the places where improvements are required, and specifies in detail for each the kind and quantity of labor and materials.

97. The first section is from Pittsburg to Wheeling, and will require	$63,200
Second section, from Wheeling to Letart's falls	66,200
Third section, from Letart's falls to Portsmouth	17,000
Fourth section, from Portsmouth to Louisville	28,500
Office expenses, stationery, and contingencies	9,200
Making a total of	184,100

98. He says: "In presenting my estimate for the next year, which amounts to one hundred and eighty-four thousand one hundred dollars, I have endeavored to bring it to a sum which you would willingly recommend, and Congress would cheerfully appropriate. But, if I were solely guided by the importance of the work, and limited the amount to the sum which I could judiciously apply without increasing the necessary contingent expenses, it would have been greatly increased. I have not offered, nor do I now offer, an estimate for the completion of the work; for there is much which may arise that I cannot pretend to foresee. The more costly part of the improvements, however, will be on the upper half of the river."

99. The estimate for the Ohio river below the falls, and for the Mississippi, the Missouri, and the Arkansas, has already been stated at	$249,400
Which, added to the amount for the Ohio, above the falls, viz:	184,100
Will make a total of	433,500

which amount will be found with the estimate, herewith submitted, under the phraseology of existing appropriations for those objects.

100. Delaware breakwater. The original estimate for this work of 1829 amounted to	$2,216,950
The revised estimate of 1836	3,039,909
The appropriations at various times have amounted to	1,921,000

101. The last appropriation was in 1838; since the expending of which, it may be said that the work has received but little attention. If it be not intended to complete this work, in conformity with the original and revised plans and estimates, it seems to me unnecessary that it should continue to form an item in the annual report. I shall therefore, with the approbation of the department, merely state that one hundred thousand dollars is the least that can be required for its recommencement and further prosecution. But even this amount need not be appropriated, unless it be contemplated to grant the further appropriations that will be necessary.

102. Light-house upon the Brandywine shoal. The first light erected on the shoal was by virtue of an appropriation of $29,200, in 1826. I believe it did not stand the storms of a single season, having entirely disappeared before the termination of the first winter after it was erected.

103. The shoal is a dangerous obstacle, at the mouth of Delaware bay; and a light-house upon it is of extreme importance to the navigation of that bay. After the catastrophe which befel the one that had been erected

hundred and twenty feet wide. The one through the Choctaw pass has been completed, and that through the Dog River bar had been commenced. The path through both is essential, as to make it through one only is a comparative waste of expenditure.

119. I do not now submit any estimate for this work, as, in my judgment, before any further expenditure is made upon it, a most thorough examination should be instituted, to ascertain how the channel holds which was cut through the Choctaw pass, and to ascertain the currents, their direction and velocity, and the character of the bottom throughout the bay as well as over the shoals.

120. Such an investigation, to be satisfactory, should be minute and accurate, and should extend much below, as well as above, the bars. For these purposes, the sum of five thousand dollars, for the survey of this harbor, will be submitted.

121. Mouth of the Suwannee, Florida. An accurate survey of the mouth of this river, together with an estimate for its improvement, were made in 1840, in pursuance of a law of Congress in 1839; and they were duly submitted to the consideration of Congress in January last. The law under which this duty was performed authorized both the survey and the improvement; but the amount (fifteen thousand dollars) was so inadequate for both, that, after meeting the expenses of the survey, the balance was allowed to lapse to the surplus fund. The direction to make the improvement is still an obligation of law, but it cannot be executed until an appropriation be granted.

122. The obstructions consist of an oyster bank and shoal, which seal up the mouth of the river to vessels drawing more than four feet of water. The survey exposed a better channel than had been used heretofore, leading within the oyster bank; from which it was proposed to dredge an opening of sufficient width, and with a low-tide depth of not less than five feet, to the mouth of the river.

123. The river is one of the finest in Western Florida, and the mouth once attained, there is excellent steamboat navigation for many miles in the interior. The admirable position of the Cedar Keys is off the mouth of this river, yet sufficiently near to constitute its outer harbor. The estimate for the improvement is forty thousand dollars; which, it is not doubted, would accomplish the object, as the dredge boats heretofore in use in Mobile bay could be readily assigned to the mouth of the Suwannee.

124. In the estimates heretofore submitted, thirty thousand dollars was asked for the service of a year; but when it is considered that the new fiscal year will give the appropriation unexhausted for the most favorable season for operations in that climate, and the difference between the estimate for the work and that heretofore asked for the year is so small, it is considered advisable to submit at once to the consideration of Congress the estimate for the whole.

125. Improvement of the Savannah river, Georgia. The obstructions to be removed, in this case, arise from what are called "the wrecks," which are the remains of vessels sunk by both the Americans and the British, during the revolutionary war; and from the gradual but increasing accumulation of mud and sand, in consequence, there is great danger that the port of Savannah will become in a measure inaccessible to vessels of much draught.

126. The plan proposed for removing the impediments was by dredging

out the deposite, and by obstructing the passage between Argyle and Hutchinson's island. This last part of the plan, however, came in conflict with certain rights of the State of South Carolina, under an arrangement between that State and the State of Georgia, made in 1787. The State of Georgia was willing that the work should go on, but the commissioners on the part of the State of South Carolina objected to it; and, in consequence, only the dredging part of the plan was attended to. This was but a temporary relief; for the same cause existing, in a bottom or soil of so little tenacity, the same evil effects would again follow; and I have but little doubt that the amelioration from the dredging has by this time partially, if not entirely, disappeared.

127. If the channel could have been closed, as proposed, the additional volume of water thrown over the wrecks, and the additional velocity it would have acquired, would, in all probability, have kept the passage free.

128. Under the circumstances, however, it will be readily admitted that it would be injudicious to ask for appropriations, or to make expenditures, in a case in which a part of the plan essential to its success cannot be pursued.

129. As the obstructions were occasioned by the nation, and for national purposes, the obligation upon the nation to remove them is very clear. And since the plan proposed cannot be pursued, the question is, can a plan be devised which shall not conflict with the vested rights of either State? It appears to me that this can be done by a direct attack upon the cause of the obstructions; or, in other words, by removing these wrecks, or what remains of them, and thereby to restore the channel to its former condition.

130. I am fully aware that this notion may, to the minds of many, appear chimerical; but when I reflect upon the great improvements in machinery, and upon the extraordinary performances in the lifting of sunken and buried wrecks by Mr. Stacy and his associates, of New York, I am not without strong hopes of success. That gentleman is now examining the Mississippi, in order to see if his machinery can be applied advantageously to the removal of snags. This is a voluntary visit on his part, and at his own expense. Were he to go to Savannah, in order to examine the wrecks, it would be at the instance of the office; and as the examination could not be made as thoroughly as would be necessary to decide upon the practicability of the plan, without an expense of both time and money, he should, if employed for the purpose, have his expenses refunded.

131. But such is the specific character of our appropriation laws, that there is none out of which these expenses could be taken. It is therefore necessary to submit an estimate to meet them; one thousand dollars will be sufficient for the purpose. The object in contemplation is one of great importance, and the desired examination and report can readily be made in time for the action of Congress during its present session.

132. Cape Fear river, North Carolina. The improvements of this river, upon which the Government has been engaged, are below the town of Wilmington. They consist of jettees in the river and a dike to close the channel between the western shore and Campbell's island. The jettee work consists of 10,730 feet, and the dike is 960 feet long. The dike has not been finished.

133. To carry out the original plan, there yet remain to be constructed

three jettees, comprising about 3,590 feet in length, the dike to be completed, and to rebuild 1,760 feet of jettee work.

134. The estimate for this work, in the fall of 1839, was $40,000, but from the dilapidations to which this, as well as every other work of human art, is inevitably exposed, and from the utter inability of the department, for the want of appropriations, to make any repairs, that sum would now be inadequate to accomplish what the estimate then anticipated. It is, however, considered advisable to ask for no more in the estimate for the ensuing fiscal year.

135. Dismal Swamp canal, Virginia. This canal belongs to an incorporated company, but the United States hold in it one hundred and fifty thousand dollars worth of stock. In 1836 and 1837, Congress made appropriations to improve its northern and southern outlets. The canal had its northern outlet in Deep creek, which, when the canal was first constructed, was sufficiently deep for the kind of craft then used; but since the canal has been enlarged so that vessels drawing six feet water can pass through it, this creek has become very shoal; and when southerly winds prevail, which occasion low tides, there was great detention at the outlet lock.

136. Dredging being unsuccessful, the following plan was suggested, viz: to build a dam across the creek, which would hold back the water to a desired depth, to cut a canal from above the dam about two miles and a quarter long, and to build a new outlet lock near Elizabeth river. This outlet is in twenty-five feet water, and within less than four miles of the navy yard. The width and depth of this new cut were greater than were required merely for canal purposes, and the cut itself was not considered a measure so essential to the uses of the canal as to have involved the company in the expenses for its excavation.

137. But these modifications were considered as important to its national uses, and as the best means of fulfilling the intention of the appropriation by the United States, which was to improve the outlet of the canal. They, no doubt, also much improved the uses of the canal; there was, in consequence, an understanding between the bureau (which at that time had charge of such United States expenditures) and the canal company, that if the company would excavate the canal of the dimensions proposed, the United States would build the dam and the outlet lock.

138. The company has fulfilled its part of the agreement; but before the United States had completed their part, the suspension of appropriations for these objects of 1838 occurred, and since that time the canal company has itself completed the lock and dam alluded to, and now urges the refunding of the amount expended by it for those purposes, being about thirty thousand dollars.

139. These circumstances occurred before the transfer of the work to the superintendence of this bureau. It does not appear that any formal agreement was entered into by the parties, but it is evident that such an understanding existed, and the department has always sanctioned an estimate to meet it. The agents of the company earnestly solicit attention to the claim. And during the last winter the president and a committee of directors visited Washington, with documents and books of the company, the better to explain it. Under these circumstances, it appears proper to bring the matter to your consideration, as an item of the estimates.

140. Harbor of Newcastle, Delaware. The true point of view in which

this harbor should be considered is that of its being a winter harbor for the port of Philadelphia—a harbor of refuge, during the winter, for the commerce of that port and of the Delaware bay. And the object of the improvement is to furnish security and protection to that commerce.

141. Taking the average of our winters, there are about two months during which the river above Newcastle is blocked up with ice, and all navigation stopped. And, even if the efficiency of steam icebreakers should realize anticipations, yet vessels must seek shelter somewhere, while awaiting their turn to be towed up. And from the consideration that it is at Newcastle where the bay ends and the river commences, it will be there where the commerce of the port of Philadelphia must congregate, until it can pass up the river.

142. It is stated by the collector that no less than two hundred vessels, the aggregate tonnage of which may be computed at about forty thousand tons, now annually seek the protection afforded by the imperfect structures for that purpose which the Government has erected there; and it is well known that the fear that this protection will not be sufficient drives many a vessel, during the winter, to a more favored port.

143. The estimate now submitted is the result of a careful survey, and of a well-digested plan, the details of which have been already before Congress. The amount of the estimate, revised with great care, during the last season, is fifty-four thousand five hundred and fifty-five dollars. But it is considered that twenty-five thousand dollars will be sufficient for the ensuing fiscal year.

144. There are several other places on this river, at which the Government has, at various times, made expenditures for the protection of its commerce—such as at Port Penn, Marcus Hook, and Chester; but, in conformity with the principles of the classification before alluded to, it is not considered advisable to specify these. The bureau is, however, provided with specific estimates and plans for each, and is ready to furnish them whenever required.

145. Lake harbors. The subject of these harbors is one of extreme interest. It is difficult to approach it without feelings bordering on enthusiasm, in the contemplation of the vast amount of wealth, of power, of national greatness, and of a prosperity without precedent, as yet but the shadow of what it will be, which these harbors have already and are destined so much further to develop. Nor, in our contemplation, should we omit a just tribute of veneration to that great mind which foresaw them, and which projected and completed the canal from Buffalo to the Hudson, without the aid of which the immense resources of the lakes would have yet remained comparatively dormant.

146. It is within a few years, within the memory of a medium life, when these lakes, now teeming with such an immense commerce, were the lonely path of the wandering traveller, and of the Indian with his canoe; and when their extensive and fertile shores, now populated, cultivated, full of wealth, of prosperity, and of civilization, were the desert domicile of the wandering savage.

147. And in tracing effects to causes, the conclusion seems to me incontrovertible, that all is owing to those moderate aids which free institutions have furnished to the enterprise and industry of their citizens.

148. The total amount which has been appropriated for the improvement of the lake harbors, from the origin of the system in 1825 to the

present day, is two million four hundred and sixty-three thousand five hundred and sixty-four dollars. Of this amount, ten thousand eight hundred and sixty-eight dollars have passed to the surplus fund, leaving, for the amount *appropriated and expended*, the sum of two million four hundred and fifty-two thousand six hundred and ninety-six dollars.

149. The division of this sum upon the several lakes, in conformity with the appropriation laws, has been as follows:

Upon Lake Champlain	$171,500
Ontario	410,405
Erie	1,201,344
Michigan	469,447

150. As the object of these expenditures is to protect the commerce of the lakes, it may not be uninteresting to ascertain the value of that commerce. In order to determine this question with some accuracy, circulars were written, in 1842, to the agents of this bureau, and to those of the custom-houses upon the lakes, for such information as would elucidate it, and for returns which should exhibit the kinds and quantities of which the commerce was composed, extending through a series of years, from 1835 to 1842. These circulars were duly answered, and returns furnished from many places, giving all desirable details. From these returns, the consolidated statements annexed to this report were made, exhibiting the moneyed value of the commerce, and the kinds and quantities of which it consisted.

151. An examination of the statements will exhibit many imperfections, but will also clearly show that these do not occasion any errors of excess, but that, from deficient returns, and from the many towns not named, because no returns were received from them, the errors are of a kind only to exhibit less than the real amount of the commerce of the lakes.

152. The detail returns, from each place named in the consolidated statement, exhibit with much minuteness the kinds and quantities of articles exported and imported, as well as the moneyed value of the same.

153. To have furnished copies of these would rather have perplexed than elucidated the subject, and therefore the form of the consolidated statements now submitted was adopted.

154. These statements are of two kinds: one exhibits the moneyed value of exports and imports from 1835 to 1841, inclusive; the other, as far as could be ascertained, the kinds and quantities of articles of which the trade consisted for the year 1841.

155. The series of years enumerated in the moneyed value statement furnish data to judge of the increase of the trade; and the enumeration of kinds, in the statement of kinds and quantities, shows how great a proportion of this trade consists in products of the soil.

156. Taking the year 1836 as an example, (the returns of 1835 being imperfect,) the whole import trade was then fourteen million one hundred and thirty-seven thousand and twenty-six dollars; and the whole export trade was two million three hundred and twenty-four thousand two hundred and forty-eight dollars. Now, referring to the year 1841, (the returns of 1842 being very incomplete,) it will be found that the import trade had increased to thirty-three million four hundred and eighty-three thousand four hundred and forty-one dollars, and the export trade to thirty-two million three hundred and forty-two thousand five hundred and eighty-one dollars—about sixteen times greater than the export trade

of 1836, exhibiting the enormous increase in exports of about thirty million in five years, and an increase, in the same period, of about nineteen million of imports. The progress of this increase can be traced through the several years of the statement of moneyed value; and although the articles of which this commerce consisted is exhibited in the various returns in this office for the same years, yet, as before remarked, the consolidated statement is confined to the articles of the year 1841. The examination of this statement will show the kind and quantities of these articles for that year. From these returns it will appear that the commerce of the lakes amounted, in the year 1841, to sixty-five million eight hundred and twenty-six thousand and twenty-two dollars. And for this, as well as for all of the years of the statement, there is no account of the export trade of Buffalo, no returns of the export of that place having been received. I will beg leave, also, to remark, that by export and import trade is intended to express the amount of trade, at the several harbors named, by means of the shipping of the lakes.

157. There can be no doubt that, since 1841, this trade has experienced a great increase, but the information in this office terminates with that year. There is not upon these lakes, being altogether inland, that well-established custom-house system which is found upon our Atlantic coast, and which enables the Government to obtain, so readily, the most accurate knowledge of the trade of the coast. But the vast importance of this lake trade, as now exposed, and the extreme value of a knowledge of it to the commercial statistics of our country, will no doubt attract to it the requisite attention and supervision.

158. The whole extent of lake coast is about five thousand two hundred miles; of which about two thousand is the coast of a foreign Power. This, however, includes the coast of Lake Superior, from which there are no returns of its trade; and it also includes the coasts of connecting rivers, such as the straits of Niagara, Detroit, and St. Mary, or Sault St. Mary.

159. This coast washes parts of the shores of no less than seven of our States and one Territory, viz: Vermont, New York, Pennsylvania, Ohio, Indiana, Illinois, and Michigan, and the Territory of Wisconsin. The population of these States, and of the Territory of Wisconsin, was, by the census of 1840, equal to seven million three hundred and sixty-nine thousand six hundred and forty-four. It cannot be said that all these inhabitants are immediately connected with the lake trade; but it may be said, with great truth, that at least one-third are; or, in other words, to an amount equal to two million four hundred and fifty-six thousand. The population of the riparian counties alone amounts to one million one hundred and fifty seven thousand, (inclusive of the State of Michigan, which is emphatically a lake State.) It is not merely the population of the counties resting immediately upon the lakes, but also of those immediately adjacent, and those resting upon the river tributaries to the lakes, which depend upon the lake navigation for access to a market, and which justify the assumption of one-third, as above taken—an assumption that cannot be considered in excess. But commerce is like an endless chain; we know not where to limit its ramifications and interests; and, in this case, it is well known that the commerce of these lakes has extensive connexions with the great valley of the Mississippi, and with the most important seaports upon the Atlantic.

160. From these remarks, I feel justified in the assumption of the following facts:

1st. The whole amount which has been appropriated and expended in efforts (and with much success) to improve certain harbors upon these lakes, from the commencement of the system to the present time, is no more than two million four hundred and fifty-two thousand six hundred and ninety-six dollars.

2d. The commerce of these lakes amounted, in 1841, to sixty-five million eight hundred and twenty-six thousand and twenty-two dollars.

3d. The coast of these lakes equals about five thousand two hundred miles, whereof about two thousand miles is a foreign coast.

4th. The population (American) immediately connected with, and depending upon, the navigation of the lakes is two million four hundred and fifty-six thousand.

161. In order to illustrate the relative connexion between the lakes, and between the several harbors which have been subjects of Government appropriations, a map has been compiled, and will be found attached to this report. Upon an examination of this map, and particularly its extensive line of coast, among the physical peculiarities which are strikingly exemplified, is its nakedness of protection, its singular destitution of harbors, or places of refuge and shelter for its trade. The efforts of the Government in the improvements which have been authorized, and which are in a state of gradual completion, are to remedy these defects of the coast, in creating artificial protection to interests of such immense magnitude.

162. The classification which has been before alluded to was also applied to these lake harbors; and as it has prevailed in the estimates of the last two years, it may probably be advisable to adhere to it in the estimates for this, with such modifications as the laws of Congress require, being, in the present instance, the addition of one new harbor to the list—Milwaukie, on Lake Michigan.

163. In conformity, therefore, with the observations just made, the following specifications of lake harbors and of estimates is submitted:

164. Breakwater at Plattsburg and at Burlington, on Lake Champlain. Plattsburg and Burlington, upon opposite sides of Lake Champlain, are similarly situated in reference to the artificial protection they require. They are both open roadsteads, where the lake is very wide, and where the shores of the lake afford the principal landing places. The object of the improvement is to protect the shores of these towns, aud to afford refuge to the lake navigation from the violent and destructive surf in times of heavy winds, by a breakwater established in the offing, with prop r dimensions of length, breadth, and height.

165. The plans and estimates for the work were duly approved, and the work at both places has been pushed forward with some activity.

166. To add those extensions of the work which are necessary to afford the protection required, and in conformity to the approved plans, will call for an expenditure of about fifty thousand dollars at each of these places. But not more than twenty-five thousand dollars will be wanted at each during the next fiscal year.

167. Harbor of Oswego, Lake Ontario. This harbor is an important position upon our frontier, being a connecting point of the canal with the lake. Its importance is such, in the eyes of the Government, that, during the late state of inquietude on the frontier, appropriations were made for

the erection of fortifications there. It may therefore, with great truth, be considered as a fortified frontier town. The original and natural harbor was a small bay, of good depth, but much exposed to the excessively violent surf of the lake.

168. The plan of protection has been that of extending a species of jettees from each side of the harbor mouth into the lake; and the plan may be considered as having been carried out, as present estimates rather contemplate the replacing with more durable the perishable materials used in the first instance, than additional works. But without such replacing, the work cannot stand much longer. The upper part, occasionally dry and wet, is exposed, like wood under similar circumstances any where else, to rapid decay. Three serious breaches had been made in the body of the work since 1839. These are now more to be apprehended, as the superstructure, from the causes stated, is becoming daily more feeble.

169. Under the direction of having the items of the estimate as low as sound economy and a judicious application of funds will justify, there will be required for this harbor, for the service of the next next fiscal year, no more than forty thousand dollars.

170. Mouth of Genesee river, Lake Ontario. This is also a harbor which forms a point of communication between the lake trade and the Atlantic, by means of a branch of the New York canal, which has its outlet there. Its situation is more favorable, in some respects, than that of Oswego, in being nearer the centre of supplies, about equidistant from either extremity of the lake, and in being so far from the military positions of our neighbor upon that lake as to be exempt from apprehension of sudden enterprise, that it constitutes an admirable point for a national depot.

171. The estimate for the completion of the work amounts to about $60,000, but it has experienced such serious injuries since the date of that estimate, from its unfinished condition, and the utter inability, from the want of means, to make repairs as required, that it is doubted if that estimate will now hold out.

172. The report of an inspection, dated the 1st of September, 1842, represents that the "west pier head," eighty feet by ninety, is almost entirely destroyed to from four to seven feet below the water surface. There is also about forty feet of "the pier" gone, from two to four feet below the water surface. The wood work of this pier, generally, is in a bad condition. For about eleven hundred feet from the lake end it is in a tolerable state of preservation; but the remainder, about one thousand eight hundred feet, is much decayed above the water line. About forty-five feet of the "east pier head" has been swept away to from three to four feet below the water line; and of the pier connecting with this pier head, for about five hundred feet, the stone had been washed out to from two to six feet in depth. There was also a breach through it about forty feet long, and about three feet below the water line; and, generally speaking, the timbers, from the water line and above, were in a state of decay.

173. With the balance of a former appropriation for repairs, about sixty feet of the west pier head has been rebuilt, the east pier partially repaired, and the breach mentioned was also repaired.

174. From an inspection in July last, the east pier had experienced additional and serious injuries; and serious apprehensions are entertained that the storms of the coming winter and ensuing spring will completely destroy the greater part of it.

175. Twelve thousand two hundred and forty-five dollars are estimated as required to place this work in a state of security, and ready to receive a superstructure of durable materials. This estimate, however, does not anticipate the effects of the ensuing winter and spring storms.

176. In reference to this work, and for the service of the fiscal year ending the 30th June, 1845, I do not consider it advisable to ask for a less sum than $40,000.

177. Harbor of Buffalo, New York. The appropriations and expenditures heretofore made at this place originated at a period when few anticipated its extraordinary increase and extensive commerce; and although they were highly essential, and have been extremely beneficial, yet the great increase of the trade of that place gives now to previous efforts and plans for the benefit of the harbor a local and limited character—rather the protection of a dock than the construction of a harbor. There is, in fact, no harbor, properly speaking, at Buffalo, under the protection of which revenue and other national vessels, or vessels engaged in commerce, can safely ride at anchor during storms, or during periods of floating ice. These convictions early impressed themselves upon the department, and, in consequence of its directions, the officer of the corps on that station was ordered to make a thorough survey of the offing, in order to ascertain if a harbor, commensurate to present and increasing wants, and which should furnish a protection for national as well as commercial marine, affording the required shelter at all times, could not be made.

178. The duty was executed with much ability. A survey, full of interest, was made, and the plan and estimate duly submitted. These were laid before Congress in February, 1840.

179. The plan consists in the construction of a breakwater, and in the extension of the present pier, in a western direction, so as to cover the entrance at the southern end of the breakwater, and to turn the floating ice outside of the breakwater structure into the current and direction of the Niagara.

180. Among other consequences of this arrangement, it will furnish "a safe harbor for vessels running for a port during the heaviest gales from the southwest; for not only vessels bound to the port would seek its shelter from storms, but vessels from all parts of the lake are compelled to direct their course towards it, unable, frequently, to resist the violence of the tempest, or to run into harbors of less easy access."

181. The position becomes under this aspect an object of peculiar importance; and when it is also considered that Buffalo is the eastern point of concentration of the lake trade, the proposed harbor there becomes one of protection and refuge for the whole lake commerce.

182. The plan, in all of its parts, completed above the water line and carried to the desired height, with the materials and in the manner contemplated by the officer who made the survey, would require a large expenditure.

183. Plans of works of this kind embrace the direction and position of the structure; its dimensions—length, breadth, and height; the batter or slight slope, in proportion to height; the materials—wood, iron, stone; and method of construction. This last involves two considerations—one of construction under water, the other above; its finish, and the style of work; which, however, are often intimately allied to strength and durability.

184. These are the general or leading items of an estimate; to which

may be added, the essential matter of soil, or natural foundation upon which the work is to rest. This last, in the present case, is highly favorable, as the soundings of the survey indicate a rocky bottom.

185. There are some of these items upon which, in reference to the present locality, there can be scarcely differences of opinion; there are others in reference to which such differences may well exist. On these accounts, it is not unusual when appropriations authorizing the commencement of a work are granted, to have the plan and estimate carefully revised, in all its details, by a board of officers, the report of which, being submitted to the War Department, and having there received what further examination may be desirable, with the aid of the chief of the corps, it is then, if approved by the War Department, retained in the bureau as authority and as a guide for its operations.

186. But, as before remarked, this course is a consequence of appropriations by which the work is authorized, and generally follows a first appropriation for a new work. The plan which was made in 1839, for the construction of a harbor at Buffalo, has always been considered in the character of a new work at that place; and as soon as any appropriation is obtained for it, it will be carried through the ordeal of a board, as just described.

187. Also, as before remarked, there are matters in such structures upon which all opinions will probably unite; there is, therefore, always a sufficiency of certainties for the department to decide upon the propriety of a preliminary estimate, and for Congress to decide upon the propriety of a preliminary appropriation.

188. In this case, what may be treated as certainties are: 1st. The necessity for the work itself. Buffalo being the point at which the trade of the lakes concentrates, the amount of that trade being known; and the fact that there is no harbor there in which shipping can lie at anchor places this question beyond doubt.

189. 2d. The position or plan of the work. This is decided by a knowledge of the prevailing winds, storms, currents, floating ice, and bottom; all of which have been carefully ascertained.

190. 3d. Cross sections of the work. The depth of water, and ability to resist the surf and ice, determine this point. Experience in similar structures on the lakes gives its desirable aid.

191. 4th. Materials and mode of structure under water. Here, also, experience lends its efficient aid, as well as in reference to cost. Upon the lakes, we know from experience that timber submerged lasts as long as any material; therefore, under water, the timber crib, loaded with stone, is an approved structure.

192. From these certainties, then, sufficient data for a preliminary estimate, deserving every confidence, are always to be obtained.

193. As the work approaches the surface of the water, rises above it, and is carried to the required height, there arise questions upon which differences of opinion may exist, and in reference to which the reasons and opinions of a board of officers are so desirable. Shall the crib work be continued with timber imbued with some of the mineral salts? Shall concrete be used? Shall masonry? Which last involves considerations of all the various kinds of masonry applicable to such structures. These are matters in reference to which questions of comparative cost, of facility in their use, of durability, of time to complete, of liability to accidents, &c.,

would form matter for the reasoning and experience of a board, and appertain to the ultimate completion of the work. Yet, however, it must be admitted that works of this kind can be completed, and be made to render all the use anticipated from them, with perishable materials, when, in the course of a few years, as these materials yield, the more permanent could be made to supply their places. But, at the same time, it cannot be doubted that the gradual completion of the superstructure in the first instance, machinery being at hand, and laborers experienced, would be far the most economical course.

194. Yet, from the ascertained data of the present case, and from the experience of works which have been in positions somewhat similar, a preliminary estimate, deserving of the greatest confidence, can be made.

195. Therefore, to procure the requisite materials to construct, launch, and place the cribs, to load them with stone, to raise them to a height that will afford the requisite protection to the harbor, and to prepare them for the permanent materials and for the construction of the proper superstructure, may be stated with safety at (but not in my judgment at less than) three hundred thousand dollars. I have given to this matter no little consideration, and would be unwilling to hazard my opinion that as much of the structure as I have indicated could be made as such works should be for less than the amount stated.

196. The amounts, however, which shall be yearly required, involve other reflections, in no wise affecting the durability or character of the work. These amounts may, within certain limits, be made to yield to convenience and other considerations, without prejudice to the work. Also, during the first season of commencing works of magnitude, so much has to be done in the way of arrangements, and proportionally so little of actual work, that a small amount will suffice. Applying these reflections to the present case, an estimate for forty thousand dollars is submitted.

197. Harbor of Erie, Pennsylvania—Lake Erie. This harbor has been considered and rated as a first class harbor on this lake; it is also the only harbor of any note upon the borders of this lake within the limits of the State of Pennsylvania.

198. The works here have had for their object, first, to procure a greater depth at its eastern entrance, at which there had been a depth of from four to five feet; but, from the effect of the structures at this entrance, the passage into the harbor was deepened to from eleven to twelve feet; the immediate passage between the piers became much deeper.

199. Second. To protect the western end of the island, or rather Presqu'isle, as it was then, from the abrasion of the sea.

200. Third. At a later period, within the last four years, to open a passage at the western end of the harbor into the lake. By opening this passage, which is through a narrow spit of sand, Erie would become a common stopping place of boats going up and down the lake. But as it is now, from having but one entrance, and that at the eastern end of the harbor, the delays are so great in stopping there that it may really be considered as out of the track of lake travel. The harbor is, in itself, uncommonly fine, completely landlocked, of great capacity and depth, and perfectly protected from the drift and floating ice of the lake. It has been most carefully and most accurately surveyed, and a chart of it, upon a large scale, is now in the bureau.

201. Our efforts to open a channel at the western end promise the most

signal success, as, although but one line of crib work had been established, and that not extended to the length contemplated, it had already made a passage across the sand of about four feet deep.

202. The opening at the eastern end is one of the first of these efforts on this lake and, although it has stood admirably, yet it has felt the effects of time, and of those causes of decay to which timber is exposed when occasionally wet and dry, near the water line and above. Much of this old work will have to be renewed, and the superstructure should be made of durable materials.

203. The opening of these two channels will, no doubt, create a current in the harbor; and the design in the plan of the entrances is to give that current a direction towards the wharves and landing places of the town, so that the usual deposite from still water will not take place there.

204. Our operations at this place felt the suspension of appropriations before spoken of, leaving the new work unfinished and the old without means to repair. The amount yet required to complete these works, upon the plans submitted to Congress in February, 1840, is three hundred and twenty-six thousand one hundred and fifty dollars; but, for the same reasons as those stated in the case of Buffalo, a small amount, say thirty thousand dollars, will be sufficient for the year ending 30th of June, 1845.

205. Harbor of Cleveland, Ohio—Lake Erie. This harbor is at the mouth of Cuyahoga river, and is also the eastern terminus of the Ohio canal. The first efforts of the United States to ameliorate the entrance were in 1827; and a statement of the operations of every year, of estimates, and of extensions of the work, up to 1839, will be found in the report from this office of 1840.

206. It will be seen that, under these operations, an entrance, which, before the works were begun, had scarcely water enough for more than the easy passage of common barges, commanded in 1831 a depth of ten feet, in 1833 eleven feet; which it has maintained since, except when the piers have been injured.

207. When the surveys of Buffalo and of Erie were made, in 1839, it was also contemplated to make a similar survey at Cleveland, in order to revise the plan for the improvement of the harbor, and to see what additional aid its rapidly developing resources required. But the absence of appropriations for such purposes obliged the survey to be suspended, and the estimates which were then and have been since brought to the consideration of Congress contemplated no more than the substitution of durable materials for the more perishable which had been used in the first construction of the piers.

208. The piers have received all the extension into the lake which it had been contemplated to give them, being each about one thousand five hundred feet long. They were found to fulfil the most sanguine expectations, by maintaining, at all seasons of the year, a sufficient depth for the largest class of lake vessels, where, according to some accounts, previous to their construction, the entrance, at times, exhibited the appearance of a dry sand bar.

209. The operations for the last three years before the suspension of work were confined entirely to the substitution of durable materials for the pier work; and it is to complete this plan of substituting such for the more perishable that had been first used that estimates have since been made.

210. The estimate for this purpese was made in 1839, by a board of officers organized for that purpose, and its amount is sixty-six thousand seven hundred and twenty-one dollars. But at that time the work was in better condition than now; there were some materials on hand—machinery, tools, and boats—which have since been sold at a sacrifice, and have become more or less destroyed and lost. These cannot be renewed without some cost, and, consequently, not without proportionally affecting the estimate. As part of the foregoing estimate, and for the service of the year ending the 30th of June, 1845, the sum of thirty thousand dollars is required.

211. The rapidly increasing commerce of this place will probably, before many years, call for some more extensive accommodation than is now afforded. But while the modification of the piers, as now proposed, remains unattended to, it seems unnecessary to anticipate what shape that increased accommodation will have to take. But of any plan, the pier entrance to the river forms an essential part; therefore, the completion of these piers as proposed, which is, the substitution of durable for the present perishable materials, is not only necessary to perpetuate and to complete what has been already begun, but is an essential preliminary to any other and more extensive accommodation to the trade.

212. St. Joseph's harbor, Lake Michigan. The work at this place was renewed by appropriations amounting to twenty-five thousand dollars, made during the last session of Congress. As soon as arrangements could be made, the crib work was commenced, and, from the report just received, about six hundred and twenty-five feet of crib pier will be put in place, loaded, and secured, before the winter interrupts the work.

The work of this season has been confined, almost exclusively, to the southern pier. Already its beneficial effects are apparent; and vessels now get in and out easily, and without the necessity of aid from the tow of a steamboat—which aid had before to be frequently obtained. Also, vessels drawing nine feet and a quarter can now readily, in moderate weather, enter the mouth of the river.

213. Harbor of Chicago, Illinois—Lake Michigan. On the renewal of the work at this place, by virtue of the appropriations of the last session of Congress, it was found necessary to renew all of the machinery except the dredge boat; as that which had been previously used was either worn out or much injured from disuse and unavoidable exposure to the weather. The amount of these appropriations was twenty-five thousand dollars.

214. Measures for the extension of the work were àdopted as soon as practicable, and by the 1st of September two hundred feet of crib piers had been put down and filled with stone; and, with the materials then on hand and contracted for, two hundred and sixty feet more of crib pier will probably be completed before the work has to be suspended, from the inclemency of the winter.

215. Up to 1839, the piers at this place were carried out equally and parallel to each other. In that year a bar was found to have formed across the entrance of the harbor, and so close to the head of the piers as to prevent the ingress of vessels of the largest class. It being necessary to extend the piers across the bar, it was deemed expedient to expend the balance of the appropriation (twelve thousand dollars) in extending the north pier alone, and also to give the pier a direction more to the north, with a view to make the harbor accessible to vessels during the prevalence of winds from the northeast; and with the hope that, if a bar should form after the exten-

sion was made, the influence of the pier, in its new direction, would be to cause it to form at such a distance from the pier head as to allow a passage for vessels there. And it was determined not to extend the south pier any further; which the experience of the last three years proved to have been judicious; for, although the bar has formed nearly across the entrance of the harbor, its direction is to the southeast, and it is so far from the end of the south pier as to leave a channel round the south end of it, (the bar,) the general depth of which is over twelve feet, which is sufficient for the largest class of vessels navigating the lakes. But its width, owing to the great length of the south pier, is not great enough. This will be remedied by the extension of the north pier, now in progress.

216. The exports from this harbor, for 1842, are stated at eight hundred and twenty-four thousand one hundred and thirty-one dollars; the entries and clearances, at one thousand four hundred. and ten; and the amount of tonnage employed in its trade, for that year, at one hundred and seventeen thousand seven hundred and eleven.

217. The entire contemplated extension of the north pier is nine hundred and ninety feet; six hundred and sixteen of which will probably be raised two feet above the water surface with present appropriations, which will leave three hundred and eighty-five feet (including the pier head) for future operations and appropriations. It is not contemplated to extend this pier further than is now indicated; as it is believed that the work, when completed to that point, will furnish as good an entrance as can probably be made, and sufficient for the largest class of steam vessels employed upon the lakes.

218. It is believed that thirty thousand dollars will complete this pier as proposed; and therefore no more than that amount will be asked for the estimate for the ensuing fiscal year.

219. Harbor of Milwaukie, Territory of Wisconsin—Lake Michigan. This is a new work. The first appropriations for it, amounting to thirty thousand dollars, were made during the last session.

The position for the piers was determined by a board of officers organized for the purpose, and which repaired to the locality in order to judge, from personal observations, as well as from the results of surveys, of the position which, in their judgment, was the best. As soon as their decision was known and approved, the work was commenced. It has been confined, for the present, entirely to the north pier, of which by the 1st of September, four hundred and thirty-six feet had been put in place and sunk in water varying from one to five feet deep; and it is expected that four hundred and fifty feet more will be sunk in water varying in depth from five to twelve feet, before the season for such work will have terminated.

220. The estimate for the further progress of the work, during the ensuing fiscal year, amounts to twenty-five thousand dollars.

I have now completed the specification of places, in conformity with the explanations which have been given, and with the custom which has prevailed in estimates of late years.

221. For those harbor and river improvements not specified—places at which improvements had been commenced and partially completed by authority of law—it has been usual to submit a general estimate for repairs and gradual completion. It is no more than correct to say that the appropriations heretofore granted, under this head, have done but little

more than settle arrearages and make repairs. The work of gradual completion requires more efficient aid, or will be of very slow progress.

222. But to repair these works, to keep them in order, and thereby to enable the country to profit by the expenditures which have been made, is, in itself, a matter of great importance, and one that cannot be neglected without the loss of all that has been expended upon them. A small estimate, to cover such objects, is therefore submitted, of sixty thousand dollars.

223. When Captain Hughes was in Europe, his attention was directed to the system of drainage of lowlands, as pursued in Holland, and particularly in reference to the mechanical means and differences of cost. Since his return, his engagements upon the duties of his corps have been so incessant, that it has not been until lately that he has had the leisure of making up his report on those subjects, which I have now the honor to submit to your consideration as an appendix to this.

224. This bureau is the depository of a great fund of geographical and topographical matter—surveys of parts of the coast, of dangerous bars and shoals, of harbors and rivers—the results of the labors of the corps. Application is frequently made for this information, by publishers of maps and charts; and, if practicable, it is always furnished.

225. Among the matter which has been collected, are vast numbers of approximate determinations of latitudes and longitudes. These are scattered over various reports and charts, which, making them difficult to find, reduces the advantages which they might otherwise be to the gradual amelioration of the geography of the country. With the view, therefore, of diffusing this information, I have had it collected in a tabular form, and have appended it to this report.

226. A series of magnetic observations had been for some time made at Philadelphia, under the personal inspection of Professor A. D. Bache, and at the expense of the American Philosophical Society. The society becoming unable longer to meet these expenses, there was great danger that the observations would have to be discontinued before the series essential to the development of the subject could be completed. Under these circumstances, the scientific and distinguished professor just named applied to this bureau for the requisite aid, on the ground of the interesting connexion which existed between his observations and the duties of the corps of topographical engineers. In his letter he says: "The magnetic observations heretofore made at different positions, in various countries, are about to be continued for an additional term of three years; and while we have here the instruments necessary to co-operate in this great work, we are without the means required to continue the observations. It has occurred to me, that the results to be obtained are so directly connected with the important geographic operations intrusted to the corps of topographical engineers, that you may feel authorized to lend the aid necessary to procure them. One of the most valuable of these is the progress of the daily variation of the magnetic needle, as determined, by observations at short intervals during the twenty-four hours, by the most perfect instruments.

"In the nicer surveys made by the compass, it appears desirable to have the means of knowing whether the magnetic bearings are subject to irregularities, and to measure these in certain cases. Again, almost every survey of a complex kind has a determination of the variation of the magnetic needle attached to it. In surveys for boundary lines, such as have been committed to your corps, these elements become of especial importance.

"Now, the magnetic observations made at distant places show that, upon the same continent, the changes of variation are nearly, if not quite, simultaneous, and vary in amount according to determinate laws, so that fluctuations observed at one point will similarly affect needles at distant points, and may be safely taken as guides to their changes.

"Nor are these changes so small that they may always be safely neglected in practice. The daily variation itself, even in the moderate magnetic latitude of Philadelphia, is frequently more than half a degree, and fluctuates on different days from perhaps less than five minutes to thirty. It would certainly be satisfactory, in the nicer observations frequently made by your officers, to have an accurate knowledge of these changes, so as to apply them to observations at different parts of the day, or to those made for the absolute variation of the magnetic from the true meridian.

"But, besides the ordinary diurnal variation of the needle, auroras affect it sensibly, causing it to deviate in mean latitudes more than half a degree from its ordinary position; and these effects frequently begin before the aurora is visible, and continue after it has disappeared. Besides these disturbances, there are others, called by Humboldt magnetic storms, causing *wide* deviations of the magnetic needle, and not accompanied by other *visible* phenomena.

"These irregular changes could all be laid before you, so as to put the determinations of the absolute variation beyond a doubt, and probably to reconcile many discrepancies not otherwise to be accounted for.

"There is another way in which the observatory and these observations might be rendered useful to you, namely, by determining the actual error of the compasses which may be used in important surveys, either from accidental magnetism in the brass parts of the instrument, or from the magnetic axis not exactly coinciding with the axis of figure of the needle.

"Without any additional expense to your department, a number of other *results* in strict concert with the observations in other places could be furnished to you, enabling you to contribute important data to magnetic and meteorological science, both eminently practical branches.

"Should you regard this proposition favorably, I shall be happy to furnish you the reduced observations in such a form as may be best adapted to the use of your corps, and at such times as you may direct, and to put the whole at your disposal, for communication to Congress, or for such other purpose as you may choose to apply them.

"It may not be amiss to remark, in conclusion, that the expense of these observations will be moderate, as it will merely be that necessary to have them made. The superintendence of the observatory, and of the reductions of the observations, is a free-will offering on my part, while the use of the observatory and of the instruments will doubtless be freely tendered for the purpose in view by the city authorities, who have placed them under my charge."

227. Fully impressed with the just views of Professor Bache, they were duly submitted to your consideration, and recommended for your approval; which being granted, the observations have been continued without interruption, and are now going on.

In reply to the information that you had approved of the continuation of the observations, Professor Bache remarks: "This step by the War De-

partment will again bring our country into scientific connexion
union established for conducting the most important series of com
servations proposed in our times. I trust that you will not find th
rect value to your department of the observations has been overra

228. Already this bureau has received highly interesting rep
Professor Bache, who has also promised to prepare returns of his
observations, if desirable, in order to make the series more complet

These will be received in the course of the winter, and will be r
such disposition as Congress shall please to direct.

Allow me respectfully to suggest that they should be printed,
hundred copies be allowed to the bureau, for distribution.

Respectfully submitted by, sir, your obedient servant,

J. J. ABERT
Col. Corps Top. Engi

Hon. J. M. Porter,
Secretary of War.

Linseed and lard oil	108 barrels	3,400	Hides	17,018	51,108
Ploughs	111	666	Stone	15,500 perches	100,000

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Consolidated statement of articles exported and imported on the lakes in the year 1841.

EXPORTS.			IMPORTS.		
Articles.	Quantity.	Value.	Articles.	Quantity.	Value.
Wheat	2,600,455 bushels	$2,454,306	Merchandise	15,498 tons	$7,326,803
Flour	545,809 barrels	2,727,162	Lumber	9,760,274½ M	2,844,469
Pork	59,458 barrels	466,487	Coal	328 tons	9,410
Corn	98,917 bushels	33,462	Water lime and gypsum	1,500 barrels	2,088
Brooms	1,015 dozen	1,552	Flour	718,449 barrels	3,596,381
Beef	3,765 barrels	22,972	Salt	74,104 barrels	130,974
Lard	4,071 barrels	12,006	Furniture		60,549
Walnut lumber		2,275	Wheat and corn	15,000 bushels	11,000
Oats	12,038 bushels	2,868	Limestone	2,585 tons	4,249
Tallow	201 barrels	3,753	Wheat		2,373,835
Hams	134,949 pounds	7,628	Fish	9,104 barrels	58,238
Staves	3,113,966 M	47,206	Cedar posts		1,782
Grindstones	100 tons	2,000	Furs	3,946 bales	481,172
Cheese	194 casks and 203 tons	23,704	Shingles	2,694,000	9,878
Corn and timothy seed	6,172 barrels	49,184	Staves	7,860,000	276,414
Apples	783 barrels	1,263	Ashes		425,151
Butter		127,467	Pork and beef	64,250 barrels	463,872
Merchandise	200,000 pounds	75,000	Cheese	2,384,614 pounds	259,789
Ashes		91,905	Butter and lard	118,862 kegs	598,585
Tobacco	60 hogsheads	7,800	Wool	199,467	78,808
Bacon	583,600 pounds	21,850	Grass seed		47,231
Wool	270 sacks	33,111	Whiskey	26,946 barrels	160,676
Feathers	155 bales and 8,958 lbs.	6,516	Leather	380 rolls	14,160
Hides	344,920 pounds	31,589	Lead	314 tons	39,219
Iron	191 tons	5,730	Iron	508 tons	36,514
Leather	10,900 pounds	2,859	Iron ware		9,131
Hollow ware	2 tons	360	Domestic woollens		130,399
Glass	5,673 boxes	29,280	Domestic cottons		2,774
Linseed and lard oil	108 barrels	3,400	Hides	17,018	51,108
Ploughs	111	666	Stone	15,500 perches	100,000

STATEMENT—Continued.

EXPORTS.			IMPORTS.		
Articles.	Quantity.	Value.	Articles.	Quantity.	Value.
Wood	16,400 cords	$30,280	Wood	5,810 cords	$8,715
Furs	72,000 lbs. & 1,664 bales	178,995	Shingle bolts	216 cords	1,944
Fish	-	27,762	Glass	2,320 boxes	8,120
Lead	1,167,750 pounds	41,150	Feathers	98,694 pounds	37,011
Shot	580,505 pounds	34,936	Corn	159,057 bushels	69,043
Lumber	-	212,852	Oats	21,762 bushels	6,529
Copper	30,000 pounds	4,800	Hams and bacon	2,497 casks	99,880
Shingles	1,004,000	2,008	Fruit	424 barrels	2,120
Paper	419 reams	1,676	Beans	-	3,192
Whiskey	5,094 barrels	34,278	Grindstones	1,290 tons	3,225
Flaxseed	1,590 bushels	1,272	Tallow	1,551 barrels	23,265
Beans	4,462 bush. and 280 bbls.	6,125	Brooms	3,350 dozen	4,025
Rags	17,735 pounds	709	Wooden pails	58 dozen	348
Soap and candles	1,200 boxes	6,000	Tobacco	1,403 hogsheads	98,210
Plaster	1,026 tons	5,769	Sheep skins	2,683	1,342
Cut stone	15,000 tons	105,000	Eggs	-	32
Cider	384 barrels	768	Rags	155 bales	465
Fruit, green and dried	-	18,280	Beeswax	45 pounds	540
Iron ware	370 tons	25,900	Deer skins	297	297
Oil of peppermint	5,966 pounds	10,440	Flaxseed	1,684 bushels	1,684
Sheep pelts	750	562	Castings	172 tons	10,320
Axes	140 boxes	2,240	Paper	1,159 reams	3,477
Pork and hams	425 barrels	3,825	Peas	571 bushels	286
Book boards	242 bundles	151	Cotton	248 bales	7,440
Forks	38 bundles	228	Linseed oil	28 barrels	730
Aqua ammonia	22 cases	594	Nails	58 kegs	406
Ivory black	31 barrels	279	Hair	40 bales	800
Veneers	44 boxes	2,640	Beer	522 barrels	3,132
Butter and cheese	250 barrels	45,000	Wooden ware	27 nests	100
Grain of all kinds	76,000 bushels	60,900	Soap	55 boxes	275

Iron and castings		59,953	Ginseng	211 barrels	633
Merchandise, agricultural products, iron and wooden ware, salt, wheat, &c.		24,511,777	Broadcloth	18 yards	47
			Spirits	-	1,878
			Canvass	138 yards	505
Total of exports		32,348,344	Manufactures, flour, salt, furniture, merchandise, wheat, lumber, flour, pork, whiskey, plaster, hides, iron, castings, dry goods, groceries, &c.		13,478,236
			Total of imports		33,483,000

Catalogue of geographical positions determined from astronomical observations by officers of the corps of topographical engineers, and under the order of the bureau of the corps.

Places of observation.	North latitude.	Longitude in time.	Longitude west of Greenwich.	When observed.	By whom observed.
	° ′ ″	h. ′ ″	° ′ ″		
Fifteen miles below Post of Arkansas - - -	33 56 21	-		1817	Major S. H. Long, corps topographical engineers.
Post of Arkansas - - - - - -	33 58 34	-	-	1817	Do do do do.
On a sand bar a little below the Dardenac - -	35 12 15	-	-	1817	Do do do do.
Mouth of the Illinois bayou - - - - -	35 15 24	-	-	1817	Do do do do.
Mouth of Briar creek, on the Arkansas river - -	35 18 41	-	-	1817	Do do do do.
Neosho river, about 6 miles from its mouth - -	35 53 34	-	-	1817	Do do do do.
Falls of the Verdigris river - - - - -	35 49 10	-	-	1817	Do do do do.
Mouth of do - - - - - -	35 46 24	-	-	1817	Do do do do.
Belle Point - - - - - - - -	35 22 49	-	-	1817	Do do do do.
On the bank of the Red river, at mouth of Williams's creek	33 55 10	-	-	1817	Do do do do.
Hot springs of Washita, on the Arkansas, about 25 miles below the point where the river issues from the mountains	38 18 19	7 02 39	105 39 45	1820	Do do do do.
On the Arkansas, 2 miles below the river St. Charles -	38 14 18	-	-	1820	Do do do do.
Shippingsport, Kentucky - - - - - -	38 15 23	-	-	1820	Do do do do.
Camp on Mississippi river, June 8, (see narrative) -	38 26 09	-	-	1820	Do do do do.
Mouth of Maramac river - - - - - -	38 23 39	-	-	1820	Do do do do.
St. Louis, Missouri - - - - - -	38 36 18	-	90 02 35	1820	Do do do do.
Camp on Missouri river, June 28 - - - - -	38 34 33	-	-	1820	Do do do do.
Franklin, Missouri - - - - - -	38 57 09	-	92 57 05	1820	Do do do do.
Fort Osage, do - - - - - -	39 09 33	-	-	1820	Do do do do.
Cow island, Mississippi river - - - - -	39 25 05	-	-	1820	Do do do do.
Camp on Missouri river, August 31 - - -	39 49 01	-	-	1820	Do do do do.
Fort Lisa, Missouri Fur Company's establishment -	41 24 13	-	-	1820	Do do do do.
Engineer cantonment - - - - - -	41 25 04		95 43 53	1820	Do do do do.
Mouth of river Platte - - - - - -	41 03 13	-	-	1820	Do do do do.
Mouth of Elkhorn, tributary to Platte - - -	41 12 00	-	-	1820	Do do do do.
Boyer river, at commencement of Highlands - -	41 32 15	-	-	1820	Do do do do.
Elkhorn river, near Pawnee trace - - -	41 26 07	-	-	1820	Do do do do.

Village of republican Pawnees - - - -	41 17 03	-	-	1820	Do	do	do	do.
Mouth of the Missouri river - - - -	38 51 39	-	90 00 40	1820	Do	do	do	do.
Mouth of the Des Moines river - - - -	40 21 48	-	-	1820	Do	do	do	do.
Mouth of Illinois river - - - - -	38 58 23	-	90 18 00	1820	Do	do	do	do.
Cape Girardeau, Mississippi river - - -	37 18 39	-	89 17 00	1820	Do	do	do	do.
Spanish fort, at Natchez - - - - -	31 33 45	-	-	1820	Do	do	do	do.
Camp on the Platte, July 4 - - - -	39 57 40	-	-	1820	Do	do	do	do.
Camp on the Platte, July 5 - - - -	39 50 40	-	105 20 45	1820	Do	do	do	do.
Camp at the base of the Rocky mountains, July 8 -	39 23 40	-	-	1820	Do	do	do	do.
1st camp on the Arkansas, July 17 - - -	38 18 19	-	105 39 45	1820	Do	do	do	do.
1st camp on the Arkansas, July 19 - - -	38 14 18	-	-	1820	Do	do	do	do.
1st camp where the expedition partly separated - -	38 12 22	-	103 46 15	1820	Do	do	do	do.
Camp on Canadian river, August 6 - - -	35 16 19	-	-	1820	Do	do	do	do.
Camp on Canadian river, August 22 - - -	35 26 29	-	-	1820	Do	do	do	do.
Camp on Canadian river, August 31 - - -	34 57 35	-	96 33 00	1820	Do	do	do	do.
Camp on Canadian river, September 9 - - -	34 50 15	-	-	1820	Do	do	do	do.
Belle Point, Arkansas Territory - - - -	35 22 54	-	94 21 00	1820	Do	do	do	do.
Chicago - - - - - - - -	41 59 53	-	-	1823	Do	do	do	do.
Camp on Wassemon - - - - - -	42 30 10	-	90 04 45	1823	Do	do	do	do.
Fort Crawford - - - - - - -	43 03 31	-	90 52 30	1823	Do	do	do	do.
Mouth of the St. Peter's river - - - - -	44 53 49	-	93 08 07	1823	Do	do	do	do.
The Crescent - - - - - - -	44 21 27	-	93 56 15	1823	Do	do	do	do.
Great Swan lake - - - - - - -	-	-	94 34 55	1823	Do	do	do	do.
Camp, July 17 - - - - - - -	44 30 23	-	-	1820	Do	do	do	do.
Camp, July 18 - - - - - - -	44 41 26	-	-	1823	Do	do	do	do.
Lac Travers - - - - - - - -	45 39 52	-	96 34 30	1823	Do	do	do	do.
Upper part of Pembina settlement, on the Red river of the North - - - - - - - -	48 59 27	-	-	1823	Do	do	do	do.
Camp in the lower part of Pembina settlement, on the Red river of the North - - - - - -	48 59 57½	-	-	1823	Do	do	do	do.
Muskrat river (mouth of) - - - - - -	49 35 10	-	-	1823	Do	do	do	do.
Mouth of the Assiniboin river - - - - -	49 53 35	-	97 00 50	1823	Do	do	do	do.
Camp on the southern coast of Lake Winnepeck - -	50 41 03	-	-	1823	Do	do	do	do.
Fort Alexander - - - - - - -	50 36 30	-	-	1823	Do	do	do	do.
Portage des Chaines - - - - - -	50 31 30	-	95 55 05	1823	Do	do	do	do.
Portage du Bonnet (east end) - - - - -	50 26 20	-	-	1823	Do	do	do	do.
Southern extreme of Lake du Bonnet - - - -	50 14 06	-	95 59 45	1823	Do	do	do	do.
Portage du Grand Galet - - - - - -	50 07 28	-	-	1823	Do	do	do	do.
Island de la Grand Bequerre - - - - -	50 06 22	-	95 28 45	1823	Do	do	do	do.
Casse island (Lake of the Woods) - - - -	49 36 42	-	-	1823	Do	do	do	do.

CATALOGUE—Continued.

Places of observation.	North latitude.	Longitude in time.	Longitude west of Greenwich.	When observed.	By whom observed.
	° ′ ″	h. ′ ″	° ′ ″		
Red Rock island	49 11 33	-	-	1823	Major S. H. Long, corps top. engineers.
Sandy island	48 56 04	-	-	1823	Do do do.
Mouth of Rainy river	48 53 40	-	94 21 15	1823	Do do do.
Camp on an island in Rainy lake	48 35 35	-	-	1823	Do do do.
Lower portage of St. Croix river	48 14 05	-	-	1823	Do do do.
Little Rock portage	48 24 58	-	-	1823	Do do do.
West end of the French portage	48 40 40	-	-	1823	Do do do.
East end of the French portage	48 40 24	-	-	1823	Do do do.
South coast of Dog lake	48 49 17	-	-	1823	Do do do.
South end of Dog portage	48 38 00	-	89 31 00	1823	Do do do.
Knife portage	48 36 50	-	-	1823	Do do do.
Fort William	48 23 33	-	-	1823	Do do do.
Camp, September 17, north coast of Lake Superior	48 45 00	-	88 48 45	1823	Do do do.
Bottom of Bottle bay	48 45 07	-	-	1823	Do do do.
Camp, September 24, north coast of Lake Superior	47 58 20	-	-	1823	Do do do.
Michipicotton house	47 55 58	-	-	1823	Do do do.
West end of Portage Sault St. Mary	46 30 12	-	-	1823	Do do do.
Fort Brady	46 29 55	-	-	1823	Do do do.
Fort Mackinac	45 51 00	-	-	1823	Do do do.
Detroit	42 19 18	-	83 00 10	1823	Do do do.
Mouth of Montreal river	46 33 60.5	-	90 44 30	1841	Captain T. J. Crane, corps top. engineers.
Head of Montreal river	46 18 18	-	90 24 38	1841	Do do do.
Trout lake	46 04 02	-	89 54 07	1841	Do do do.
Lac Vieux Desert, S. island	46 07 31	-	89 20 13	1841	Do do do.
Lac Brulé	46 00 46	-	89 10 32	1841	Do do do.
Mouth of Menomonie river	45 17 16.4	-	87 27 21	1841	Do do do.
Racine, (Wisconsin Territory,) west shore of Lake Michigan	42 49 33	-	87 40 22	1841	Do do do.
Cedar Keys, (Depot island,) officers' quarters, East Florida	29 07 27.2	-	82 56 12	1841	Captain C. Graham, corps top. engineers.
New channel below the mouth of the Suwannee river and Cedar Keys	29 11 12.7	-	[illegible]	1841	Do do do.

Bradford island, mouth of the Suwannee river, East Florida	29 18 26.5	-	83 05 15	1841	Do do do.
St. Louis, residence of Colonel Brant - - -	38 37 34	6 01 03.7	90 15 55	1842	Lieutenant J. C. Fremont, corps top. eng.
Chouteau's lower trading post, Kanzas river - -	39 05 57	6 18 38	94 39 31	1842	Do do do.
Left bank of Kanzas river, 7 miles above the ford - -	39 06 40	6 24 40	96 10 06	1842	Do do do.
Vermilion creek - - - - - - -	39 15 19	6 26 26.7	96 36 40	1842	Do do do.
Cold Springs, near road to Laramie - - -	39 30 40	6 27 12.3	96 48 05	1842	Do do do.
Big Blue river - - - - - - -	39 45 08	6 28 27.8	97 06 58	1842	Do do do.
Little Blue river - - - - - - -	40 26 50	6 35 36.5	98 54 08	1842	Do do do.
Right bank of Platte river - - - - -	40 41 06	6 37 11.1	99 17 47	1842	Do do do.
Right bank of Platte river - - - - -	40 39 32	6 38 31	99 37 45	1842	Do do do.
Right bank of Platte river - - - - -	40 39 51	-	-	1842	Do do do.
Right bank of Platte river - - - - -	40 39 55	6 42 32.7	100 38 10	1842	Do do do.
Junction of the north and south forks of Nebraska or Platte river - - - - - - - -	41 05 05	6 45 25.6	101 21 24	1842	Do do do.
South fork of Platte river, left bank - - - -	-	6 48 11.3	102 08 50	1842	Do do do.
South fork of Platte river, island - - - - -	40 51 17	6 54 20	103 35 04	1842	Do do do.
South fork of Platte river, left bank - - - -	40 33 26	6 56 08.9	104 02 13	1842	Do do do.
South fork of Platte river, St. Vrain's fort - - -	40 22 35	7 03 00.9	105 45 13	1842	Do do do.
Crow creek - - - - - - -	40 41 59	7 02 13.8	105 33 27	1842	Do do do.
On a stream—name unknown - - - - -	41 08 30	7 00 54.5	105 13 38	1842	Do do do.
Horse creek, Goshen's hole - - - - -	41 40 13	6 59 57.6	104 59 23	1842	Do do do.
Fort Laramie, near the mouth of Laramie's fork - -	42 12 10	7 01 24.6	105 21 10	1842	Do do do.
North fork of Platte river - - - - -	42 39 25	7 04 13	106 03 40	1842	Do do do.
North fork of Platte river - - - - -	42 47 40	-	-	1842	Do do do.
North fork of Platte river, Dried Meat camp - -	42 51 35	7 05 40.7	106 25 10	1842	Do do do.
North fork of Platte river, noon halt - - -	42 50 08	-	-	1842	Do do do.
North fork of Platte river, mouth of Deer creek - -	42 52 24	7 06 53	106 43 15	1842	Do do do.
North fork of Platte river, Cache camp - - -	42 50 53	7 09 08.7	107 15 55	1842	Do do do.
North fork of Platte river, left bank - - -	42 38 01	7 09 56.4	107 29 06	1842	Do do do.
North fork of Platte river, Goat island - - -	42 33 27	7 10 30.9	107 37 27	1842	Do do do.
Sweet Water river, one mile below Rock Independence -	42 29 56	7 11 40	107 55 01	1842	Do do do.
Sweet Water river - - - - - - -	42 32 31	-	-	1842	Do do do.
Sweet Water river - - - - - - -	42 27 15	7 19 26	109 51 29	1842	Do do do.
Little Sandy creek, tributary to the Colorado of the West -	42 27 34	7 20 31	110 07 46	1842	Do do do.
New fork, tributary to the Colorado - - -	42 42 46	7 21 57.2	110 29 17	1842	Do do do.
Mountain lake - - - - - - -	42 49 49	7 22 29.7	110 37 25	1842	Do do do.
Sweet Water river, noon halt - - - - -	42 24 32	-	-	1842	Do do do.
Sweet Water river - - - - - - -	42 22 22	-	-	1842	Do do do.
Sweet Water river - - - - - - -	42 31 46	-	-	1842	Do do do.
Sweet Water river, noon halt - - - - -	42 26 10	-	-	1842	Do do do.

CATALOGUE—Continued.

Places of observation.	North latitude.	Longitude in time.	Longitude west of Greenwich.	When observed.	By whom observed.
	° ′ ″	h. ′ ″	° ′ ″		
Sweet Water river, at Rock Independence - -	42 29 36	-	-	1842	Lieut. J. C. Fremont, corps top. engineers.
North fork of Platte river, mouth of Sweet Water - -	42 27 18	7 11 01.8	107 45 27	1842	Do do do.
Horseshoe creek, noon halt - - - -	42 24 24	-	-	1842	Do do. do.
North fork of Platte river, right bank - - -	42 01 40	-	-	1842	Do do do.
North fork of Platte river, near Scott's bluff - -	41 54 28	-	-	1842	Do do do.
North fork Platte riv., right bank, 6 ms. above Chimney rock	41 43 36	-	-	1842	Do do do.
North fork of Platte river, mouth of Ash creek - -	41 17 19	-	-	1842	Do do do.
North fork of Platte river, right bank - - -	41 14 30	-	-	1842	Do do do.
North fork of Platte river, Cedar bluffs - - -	41 10 16	-	-	1842	Do do do.
Platte river, noon halt - - - - -	40 54 31	-	-	1842	Do do do.
Platte river, left bank - - - - -	40 52 34	-	-	1842	Do do do.
Platte river, left bank - - - - -	40 42 38	-	-	1842	Do do do.
Platte river, left bank - - - - -	40 40 21	-	-	1842	Do do do.
Platte river, left bank - - - - -	40 39 44	-	-	1842	Do do do.
Platte river, noon halt, left bank - - - -	40 48 19	-	-	1842	Do do do.
Platte river, left bank - - - - -	40 54 02	-	-	1842	Do do do.
Platte river, left bank - - - - -	41 05 37	-	-	1842	Do do do.
Platte river, noon halt, left bank - - - -	41 20 20	-	-	1842	Do do do.
Platte river, left bank - - - - -	41 22 52	-	-	1842	Do do do.
Platte river, mouth of Loup fork - - - -	41 22 11	-	-	1842	Do do do.
Platte river, mouth of Elkhorn river - - -	41 09 34	-	-	1842	Do do do.
Platte river, left bank - - - - -	41 02 15	-	-	1842	Do do do.
Bellevue, at the post of the American Fur Company, right bank of the Missouri river - - - - -	41 08 24	6 23 11	95 47 46	1833	Do do do.
Left bank of the Missouri, opposite to the right bank of the mouth of the Platte - - - - - -	41 02 11	-	-	1842	Do do do.
Missouri river - - - - - -	40 34 08	-	-	1842	Do do do.
Bertholet's island, noon halt - - - -	40 27 08	-	-	1842	Do do do.
Missouri river, mouth of Nishnabatona river - -	40 16 40	-	-	1842	Do do do.
	39 36 02	-	-	1842	Do do do.

Missouri river, mouth of the Kanzas river - - -	39 06 03	6 18 11.6	94 32 54	1842	Do do do.
New Orleans, corner of Chartres and Canal streets -	-	5 59 55.5	89 58 52	1840	Major J. D. Graham, corps top. engineers.
Entrance of the Sabine river, southern or outer extremity of the bar - - - - - - -	29 40 48	-	93 48 03	1840	Major Graham and Lieutenant T. J. Lee, corps topographical engineers.
Mound A, on West Cape of the Sabine river, at its entrance into the sea - - - - - - -	29 41 27.5	-	93 50 14.2	1840	Do do do.
Doctor Everett's house, west shore of the Sabine - -	29 48 54	-	93 51 30	1840	Major J. D. Graham, corps top. engineers.
Belgrade, west shore of the Sabine - - -	30 37 38	-	93 40 18	1840	Do do do.
Hickman's house, east shore of the Sabine - - -	30 55 54	-	93 31 18	1840	Do do do.
White's house, east shore of the Sabine - - -	31 20 57	-	93 39 02	1840	Do do do.
Gaines's ferry, (Pendleton,) Sabine river - - -	31 28 15.6	-	93 44 32.8	1840	Do do do.
Logan's ferry, east shore of the Sabine - - -	31 58 24	-	94 00 02.4	1840	Do do do.
Moose river, custom-house, (Lowell's) - - -	45 39 04	4 40 59	70 14 45	1838	Do do do.
Pasckereau's house, Quebec road, high ridge - -	45 48 31	4 41 31.6	70 22 54	1838	Do do do.
Amity post office, Dunn's - - - - -	45 56 38	4 31 16.1	67 49 01.5	1838	Do do do.
Weston post office, Butterfield's - - - - -	45 41 23	-	-	1838	Do do do.
Calais, Thomson's hotel - - - - - -	45 11 24	4 29 06.8	67 15 27	1838	Do do do.
Eastport, Fort Sullivan - - - - - -	44 54 28	4 27 53.8	66 58 20	1838	Do do do.
Bangor, Maine, (Bangor hotel) - - - - -	44 47 54	4 35 06	68 46 30	1838	Do do do.
Houlton, (Houlton's tavern) - - - - -	46 07 27.5	4 31 17.6	67 49 24	1838 1840 1841 1842	Do do do.
Monument, source of the St. Croix - - - -	45 56 37	4 31 08	69 47 00	1838 1840 1841 1842	Do do do.
Park's Hill, meridian of the monument at the source of the St. Croix - - - - - - -	46 06 41.1	4 31 08	69 47 00	1840	Do do do.
Blue Hill, meridian of the monument at the source of the St. Croix - - - - - - -	46 37 58.3	4 31 08	69 47 00	1841	Do do do.
Aroostook Hill, meridian of the monument at the source of the St. Croix - - - - - - -	46 46 52.3	4 31 08	69 47 00	1841	Do do do.
Pekonk Hill, meridian of the monument at the source of the St. Croix - - - - - - -	46 59 25.3	4 31 08	69 47 00	1841	Do do do.
Grand Falls of the St. John's, (Sir T. Caldwell's house) -	47 02 54.75	4 30 58	67 44 30.9	1842	Do do do.
Major Coombe's, on the St. John's* - - - -	47 09 13	-	-	1842	Do do do.
Mouth of Green river* - - - - - -	47 18 19.6	-	-	1842	Do do do.

* Observations for longitude made, but calculations not yet completed.

CATALOGUE—Continued.

Place of observation.	North latitude.	Longitude in time.	Longitude west of Greenwich.	When observed.	By whom observed.
	° ′ ″	h. ′ ″	° ′ ″		
Mouth of Madawaska river*	47 21 50.1	-	-	1842	Major J. D. Graham, corps top. engineers.
Mouth of Fish river, officers' quarters, Fort Kent*	47 15 10	-	-	1842	Do do do.
Mouth of St. Francis, Hammond's barn*	47 10 57.9	-	-	1842	Do do do.
Head of Lake Pettiquaggamas*	47 14 09.7	-	-	1842	Do do do.
Head of Lake Petteiquaggamack*	47 22 40.4	-	-	1842	Do do do.
Astronomical station No. 11, river St. Francis*	47 26 09.8	-	-	1842	Do do do.
Astronomical station No. 12, river St. Francis*	47 27 09.5	-	-	1842	Do do do.
Outlet of Lake Pohenagamook*	47 27 32.8	-	-	1842	Do do do.
Head of Lake Pohenagamook*	47 31 39.8	-	-	1842	Do do do.
Astronomical station No. 16, Upper St. Francis*	47 37 19	-	-	1842	Do do do.
Portage bridge, over the St. Francis*	47 43 33.7	-	-	1842	Do do do.
Royal hotel, river Du Loup*	47 50 16.7	-	-	1842	Do do do.
Quebec, front of Payne's hotel, called the Union building,					Do do do.
(see Hawkins's map of Quebec)	46 48 39.3	4 45 03.9	71 15 55	1842	Do do do.
Telegraph on northeast bastion of citadel, by measurement on Hawkins's map, from Payne's hotel	46 48 25	4 45 03.8	71 15 55	1842	Do do do.
Centre of citadel, (Cape Diamond, so called,) by measurement on Hawkins's map, from Payne's hotel	46 48 16.6	4 45 04.2	71 16 03	1842	Do do do.
Mississippi river.					
New Orleans, (the cathedral)	29 57 23	5 59 56	89 59 4	-	J. N. Nicollet.†
Red river, north end of the island opposite the mouth	31 02 25	6 06 45	91 41 15	-	Do.
Natchez, (light-house)	31 33 37	6 05 53.5	91 28 22.5	-	Do.
White river, Montgomery's landing, 1 mile above the mouth	33 57 20	6 01 47	90 26 45	-	Do.
Ohio river, north side of the mouth	37 00 25	-	-	-	Do.
St. Genevieve, (Catholic church)	37 59 47	6 00 44.7	90 11 10	-	Do.
St. Louis, garden of the cathedral	38 37 28	6 01 2.6	90 15 39	-	Do.
Moingonan river, (Des Moines river,) a small island at the mouth	40 21 43	6 06 10	91 32 30	-	Do.

Montrose, or old Fort Des Moines, the mouth of the creek	40 30 34	6 06 04	91 31 00	-	Do.
Flint river, the mouth, above Burlington	40 52 56	-	-	-	Do.
Muskudeng, the lower mouth of the slough	41 14 47	6 05 26	91 21 30	-	Do.
Rock island, a quarter of a mile above Davenport's residence	41 31 50	-	-	-	Do.
Head of the upper rapids, below Port Byron and Parkhurst	41 36 08	6 01 56	90 29 00	-	Do.
Prairie du Chien, (Kipi-saging,) American Fur Company's house	43 03 06	6 04 37.3	91 09 19.5	-	Do.
Upper Iowa river, island at the mouth	43 29 26	6 04 40	91 10 00	-	Do.
Hokah river, (Root river,) the mouth	43 47 00	6 04 46	91 11 30	-	Do.
Prairie a la Crosse river, the mouth	43 49 00	6 04 56	91 14 00	-	Do.
Sappah river, or Black river, opposite the old mouth	43 57 14	6 05 36	91 24 00	-	Do.
Mountain island, or *Montagne qui trempe a l'eau* of the French	44 01 07	6 06 02	91 30 30	-	Do.
Miniskah river, or White Water river	44 12 36	6 07 25	91 51 15	-	Do.
Wazi-oju river, or Pine Wood river, *rivière aux Embarras* of the French	44 13 20	6 07 22	91 50 30	-	Do.
At Roque's, 2½ miles below Chippewa river	44 23 24	6 08 00	92 00 00	-	Do.
Clear Water river, the mouth, northwest corner of Lake Pepin	44 36 20	6 09 40	92 25 00	-	Do.
Reminicha, *Montagne la Grange* of the French, upper end of Lake Pepin	44 33 30	6 10 04	92 31 00	-	Do.
Lahontan river, the mouth, Cannon river of the Americans, Canoe river of the French	44 34 00	6 10 08	92 32 00	-	Do.
St. Croix river, the mouth	44 45 30	6 11 00	92 45 00	-	Do.
St Peter's river, the mouth	44 52 46	6 12 19.6	93 04 54	-	Do.
Falls of St. Anthony, the U. S. cottage	44 58 40	6 12 42	93 10 30	-	Do.
Ishkode-wabo river, or Rum river, the mouth	45 15 00	-	-	-	Do.
Karishon river, (Sioux,) or Undez river, (Chippewa,) Crow river of the Americans	45 16 00	-	-	-	Do.
St. Francis river, Wicha-niva river of the Sioux	45 20 30	-	-	-	Do.
Migadiwin creek, or War creek, the mouth	45 18 14	6 15 50	93 57 30	-	Do.
Kawakomik river, or Clear Water river, the mouth	45 24 25	6 16 30	94 07 30	-	Do.
Round island, at the lower end of Osakis rapids	45 35 00	6 16 48	94 12 00	-	Do.
Osakis river, the mouth	45 35 35	6 16 48	94 12 00	-	Do.
Watab river, the mouth	45 37 00	6 16 58	94 14 30	-	Do.
Pekushino river, the mouth	45 46 50	6 17 14	94 18 30	-	Do.
Wabezi river, or Swan river, half a mile above the mouth	45 54 30	6 17 28	94 22 00	-	Do.
Omoshkos river, or Elk river, the mouth	46 04 00	6 17 04	94 16 00	-	Do.
Nokay's river, the mouth	46 10 30	6 17 15	94 18 45	-	Do.

* Observations for longitude made, but calculations not yet completed.

† The observations of Mr. Nicollet were made in 1836, 1837, 1838, 1839, and 1840.

CATALOGUE—Continued.

Places of observation.	North latitude.	Longitude in time.	Longitude west of Greenwich.	When observed.	By whom observed.
	° ′ ″	h. ′ ″	° ′ ″		
Kagi-wigwam river, the mouth; Aile de Corbeau river of the French, Crow Wing river of the Americans - -	46 16 50	6 17 31	94 22 45	-	J. N. Nicollet.
Nagadjika river, opposite the mouth - - - -	46 26 00	-	-	-	Do.
Pine river, the mouth - - - - - -	46 35 00	-	-	-	Do.
Willow river, the mouth - - - - - -	46 40 30	6 13 30	93 22 30	-	Do.
Sandy Lake river, the mouth - - - - -	46 47 10	6 12 38	93 09 30	-	Do.
Swan river, the mouth - - - - - -	47 00 43	6 12 36	93 09 00	-	Do.
Kabikona, or Little Falls, the head of the falls - -	47 14 50	6 13 47	93 26 45	-	Do.
Wanomon river, or Vermilion river, the mouth - -	47 11 04	6 14 10	93 32 30	-	Do.
Eagle Nest, Savannah, or Marais aux Nids d'Aigle of the French - - - - - - - - -	47 18 10	6 14 36	93 39 00	-	Do.
Leech Lake river, the mouth - - - - -	47 14 00	6 14 52	93 43 00	-	Do.
Lake Cass, the old trading house on a tongue of land near the entrance of the Mississippi - - - - -	47 25 23	6 18 16	94 34 00	-	Do.
Pemidji lake, or Lake Travers, the entrance of the Mississippi - - - - - - - -	47 28 46	6 19 22	94 50 30	-	Do.
Itasca lake, Schoolcraft's island - - - - -	47 13 35	6 20 08	95 02 00	-	Do.
Region of the sources of the Mississippi.					
Gayashk river, or Little Gull river, the mouth - -	46 18 50	6 17 44	94 26 00	-	Do.
Gayashk lake, or Little Gull lake, end of Long point -	46 24 28	6 17 30	94 22 30	-	Do.
Kadicomeg lake, or White Fish lake, the entrance of Pine river - - - - - - - - -	46 40 25	6 16 10	94 02 30	-	Do.
Lake Chanche, southwest end - - - - -	46 46 35	-	-	-	Do.
Lake Eccleston, northwest end - - - - -	46 57 00	-	-	-	Do.
Leech lake, Otter Tail point - - - - -	47 11 40	6 17 20	94 20 00	-	Do.
Leech lake, the bay opposite Otter Tail point - -	47 07 22	6 17 28	94 22 00	-	Do.
Kabekonang river, the junction of the Upper fork, near the next-mentioned portage - - - - - - -	47 16 00	-	-	-	Do.

Portage from Kabekonang river to La Place river, near the west end -	47 15 00	-	-	-	Do.
Assawa lake, below the south end -	47 12 10	6 19 40	94 55 00	-	Do.
Cleared Pine Camp, on Leech Lake river -	47 18 00	6 16 00	94 00 00	-	Do.
Southwest region of Lake Superior.					
Madelaine island, the trading house -	46 47 10	6 03 34	90 53 30	-	Do.
St. Louis river, the trading house, called Fond du Lac, but about 24 miles up stream from the true Fond du Lac -	46 39 50	6 09 1.33	92 15 20	-	Do.
Head of the Long rapids, on St. Louis river -	46 49 42	6 09 40	92 25 00	-	Do.
Head of the Kettle rapids, or Akkik rapids on St. Croix river	45 54 40	-	-	-	Do.
Falls of the St. Croix river -	45 30 10	6 10 40	92 40 00	-	Do.
St. Peter's or Mini-sotah river.					
Mouth of the St. Peter's river, Indian agency, near Fort Snelling -	44 52 46	6 12 19.6	*93 04 54	-	Do.
Nine Mile creek, the mouth, 9 miles by land from Fort Snelling -	44 45 50	-	-	-	Do.
Shakopey Village creek, or Six Village Creek, the mouth -	44 46 15	-	-	-	Do.
Round prairie, opposite the beginning -	44 39 05	6 14 46	93 41 30	-	Do.
Tchan-kinte river, or Bois Franc river, the month -	44 36 30	6 15 02	92 45 30	-	Do.
Witakantu river, or High Island river, the mouth -	44 26 00	6 15 27	93 51 45	-	Do.
Wan-ye-cha-oju river, or Rush river, or rivière a la Prêle of the French, the mouth -	44 29 30	6 15 29	93 52 15	-	Do.
Oeynwajah, (Traverse des Sioux) the trading house -	44 21 15	6 15 52	93 58 00	-	Do.
Station on the left bank of St. Peter's river, 8 miles southwest of the Traverse des Sioux -	44 17 22	-	-	-	Do.
Mankato river, or Blue Earth river, the mouth -	44 09 06	-	-	-	Do.
Murrah-tanka lake, south end, on the north side of St. Peter's river -	44 12 40	6 17 07	94 16 45	-	Do.
Waraju river, or rivière aux Leard's of the French, the mouth -	44 16 20	6 17 38	94 24 30	-	Do.
Mouth of the lost channel, between Chapah and Red Wood river -	44 34 40	6 20 06	95 01 30	-	Do.
Patterson rapids -	44 39 50	-	-	-	Do.
Pejutazizi river, or Yellow Medicine river, and Chetambey river, (Eau de Kie river,) between the two mouths -	44 46 04	6 21 48	95 37 00	-	Do.

* Years 1836, 1837, 1838, 1839, and 1840.

CATALOGUE—Continued.

Places of observation.	North latitude.	Longitude in time.	Longitude west of Greenwich.	When observed.*	By whom observed.
	° ′ ″	h. ′ ″	° ′ ″		
Falls of St. Peter's, amidst the rapids - - -	44 50 00	-	-	-	J. N. Nicollet.
Man-yah-wakan river, (Chippewa river,) the mouth -	44 57 40	6 23 00	95 45 00	-	Do.
Iyedan lake, or Lac qui Parle of the French, Renville's trading house - - - - - - -	45 01 34	6 23 38.2	95 54 33	-	Do.
Tipsinah river, or rivière Pomme de Terre of the French -	45 10 21	6 24 16	96 04 00	-	Do.
Mauka-re-oze river, the first South fork, one mile from the mouth - - - - - - - -	45 11 37	6 25 04	96 16 00	-	Do.
Izuzah river, rivière aux Gèrs of the French, the mouth -	45 16 40	6 25 30	96 22 30	-	Do.
Inyan tauka, or Big Stone lake, the south creek, below the bend of the lake - - - - - -	45 23 00	-	-	-	Do.
Station between Tokaniway lake and Brochet lake, head of Côteau des Prairies - - - - - -	45 37 21	6 28 44	97 11 00	-	Do.
Station, of 17th August, 1839, on a lake at the head of Côteau des Prairies - - - - - -	45 41 00	-	-	-	Do.
Sources of St. Peter's river, 16th August, 1839 - -	45 47 58	6 29 18	97 19 30	-	Do.
St. Peter's or Mini-sotah river, and adjacent region.					
Station at the fork of Chetambey river - - -	44 51 05	-	-	-	Do.
Lac aux Jouës, Little Rock river - - - -	44 27 40	-	-	-	Do.
Mini-sotah lake, Lac à l'Eau Claire of the French -	44 26 43	-	-	-	Do.
Mouth of rivière le Sueur, on Man-ka-to or Blue Earth river - - - - - - - -	44 06 30	-	-	-	Do.
Blue Earth locality, on the left bank of Man-ka-to river -	44 06 26	6 16 36	94 09 00	-	Do.
Station on the left bank of Man-ka-to river, between the Wa-ton-wau river and Blue Earth locality - -	44 03 52	6 16 44	94 11 00	-	Do.
Mouth of Wa-ton-wau river, on the left bank of Man-ka-to river - - - - - - - -	44 01 00	6 16 44	94 11 00	-	Do.
Man-yah Kieh-ak-sey or Cut Cliff, or l'Ecore Coupé, of the French - - - - - -	43 57 50	6 16 40	94 10 00	-	Do.

Station on the left bank of Man-ka-to river, between Man-yah and Re-pah Kich-ak-sey	43 54 49			-	Do.
Hans-ka lake, or Long lake, eastern end	44 04 45	6 18 19	94 33 00	-	Do.
Route from the mouth of War-a-ju river to the central part of the Côteau des Prairies.					
War-a-ju river, the mouth	44 16 20	6 17 38	94 24 30	-	Do.
First encampment on the left bank of the War-a-ju, June 20, 1838	44 18 14	6 18 32	94 38 00	-	Do.
Second encampment on the left bank of the War-a-ju, June 21, 1838	44 14 29	6 19 55	94 58 45	-	Do.
Third encampment on the left bank of the War-a-ju, June 22, 1838	44 13 14	6 21 12	95 18 00	-	Do.
Lake She-tek, or Ra-be-chy lake of the Sioux	44 08 34	6 22 42	95 40 30	-	Do.
Sources of the Moingonan, (Des Moines river,) second lake of North fork	44 03 00	6 24 06	96 01 30	-	Do.
Red Pipestone quarry, near the chimney	44 00 53	6 25 17.7	96 19 26	-	Do.
Côteau des Prairie Percé, southwest end, near Lake Benton	44 14 00	6 25 29	96 22 15	-	Do.
Encampment on Tchan-ka-su-da-ta river	44 20 20	6 27 41	96 55 15	-	Do.
Ti-tan-ka-hé lake	44 26 00	6 28 04	97 01 00	-	Do.
Lake Poinsett	44 37 20	6 28 16	97 04 00	-	Do.
Mouth of Red Wood creek, on Tchan-ka-su-da-ta river	44 41 12	6 28 07	97 01 45	-	Do.
Tis-ap-to-nan lakes, (Lac des Deux Bois of the French,) south end	44 56 00	6 27 23	96 50 45	-	Do.
Hills at the head of the first fork of Izuzah river, near Punished Woman lake	45 03 20	6 27 26	96 51 30	-	Do.
Hill at the head of the third fork of Izuzah river, near Wa-ta-pa-pi lake	45 15 24	6 27 50	96 57 30	-	Do.
Fourth fork of Izuzah river, the junction in the Low prairie	45 22 36	6 27 07	96 46 45	-	Do.
Fork of Jut-pah river, the junction	44 55 50	6 24 20	96 05 00	-	Do.
Route from the St. Peter's to Spirit lake, through the southern part of the Côteau des Prairies.					
Vermilion river, the crossing place	44 41 41	6 11 58	92 59 30	-	Do.
La-hon-tan river, the crossing place	44 30 36	6 11 51	92 57 45	-	Do.

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* In the years 1836, 1837, 1838, 1839, and 1840.

CATALOGUE—Continued.

Places of observation.	North latitude.	Longitude in time.	Longitude west of Greenwich.	When observed.	By whom observed.
	° ′ ″	h. ′ ″	° ′ ″		
Izuzah lake	44 19 27	6 12 22	93 05 30	-	J. N. Nicollet.
Main south fork of La-hon-tan river, the crossing place	44 17 50	6 12 40	93 10 00	-	Do.
Ti-tan-ka Tan-ni-nan lake, east shore	44 16 41	6 13 23.5	93 20 52.5	-	Do.
Sa-ka-tah lake, near the head of La-hon-tan river	44 12 50	6 13 57	93 29 15	-	Do.
Crossing place on Tchan-kas-na river	44 06 20	6 14 35	93 38 45	-	Do.
Crossing place on Te-wa-pa-dan river	43 57 45	6 15 17	93 49 15	-	Do.
Crossing place on Te-wa-pah-tan-ki-yan river	43 55 30	6 15 54	93 58 30	-	Do.
Crossing place on Man-ka-to river	43 52 10	6 16 28	94 07 00	-	Do.
Crossing place on Tchan-jush-ka river	43 47 00	6 17 28	94 22 00	-	Do.
O-man-hu lake, east end	43 40 50	6 18 30	94 37 30	-	Do.
Crossing place on the Mo-in-go-nan river	43 38 30	6 19 38	94 54 30	-	Do.
Spirit lake, about the middle of the northern shore	43 30 21	6 20 26	95 06 30	-	Do.
Return route from Spirit lake to the St. Peter's, through the Côteau des Prairies.					
Crossing place on the Mo-in-go-nan river	43 29 20	6 19 20	94 50 00	-	Do.
O-ka-man-pi-dan lake, south shore	43 29 17	6 18 14	94 33 30	-	Do.
Tchan-has-san lakes, (Lacs Melés of the French,) north shore	43 30 44	6 17 42	94 25 30	-	Do.
Crossing place on Iva-hen-de river, or river of the Lakes	43 33 00	6 17 20	94 20 00	-	Do.
Crossing place on the Man-ka-to river	43 39 33	6 16 14	94 03 30	-	Do.
Te-wa-pah-tan-ki-yan lake, northeast angle	43 52 33	6 15 44	93 56 00	-	Do.
Crossing place on Psah river	43 58 25	6 15 00	93 45 00	-	Do.
Crossing place on Tchan-kas-na river	44 01 00	6 14 16	93 34 00	-	Do.
Lake Geyer, northwest angle	44 03 40	6 14 00	93 30 00	-	Do.
Lake Scammon	44 12 44	6 14 06	93 31 30	-	Do.
Mouth of the Racoon fork, on the Mo-in-go-nan (Des Moines) river	41 34 44	6 14 28.5	93 37 07.5	-	Do.

Station on the right bank of the Mo-in-go-nan river, below Raccoon fork	41 28 21	6 12 54	93 18 30	-	Do.
Station on the right bank of the Mo-in-go-nan river, opposite Vessoi's trading-house	41 08 24	6 10 36.1	92 39 01.5	-	Do.
Station on the left bank of the Mo-in-go-nan river, at Phelps's trading-house	40 59 01	6 09 35	92 23 45	-	Do.
Missouri river.					
Mouth of Missouri river, the south bank, 18 miles above St. Louis	38 50 50	6 00 55	90 13 45	-	Do.
Portland, Callaway county, Missouri, left bank of Missouri river	38 42 57	6 06 41	91 40 15	-	Do.
Nashville, Boone county, left bank	38 47 07	6 11 18	92 49 30	-	Do.
Booneville, Cooper county, right bank	38 57 18	6 10 46	92 41 30	-	Do.
Grand river, southwest of the mouth	39 19 00	-	-	-	Do.
Lower Liberty landing	39 11 43	6 17 21	94 20 15	-	Do.
Fort Leavenworth, the landing place	39 22 40	6 18 56	94 44 00	-	Do.
Sand bar 18 miles above Fort Leavenworth, above the old cut-off	39 29 42	6 20 04	95 01 00	-	Do.
Black Snake hill, the landing	39 44 23	6 19 10	94 47 30	-	Do.
Antelope island	40 04 23	6 21 18	95 19 30	-	Do.
Nishnabatona river, opposite the mouth	40 16 50	6 21 40	95 25 00	-	Do.
Bald island, lower end and western side	40 34 00	6 22 18	95 34 30	-	Do.
Five Barrel islands	40 49 44	6 22 48	95 42 00	-	Do.
Island three miles below Council Bluffs,* by water	41 28 20	6 23 02	95 45 30	-	Do.
Inyan Yanke, (Little Sioux river,) 3 miles below the mouth	41 47 00	6 23 36	95 54 00	-	Do.
Wood Hills, old trading house	42 00 49	6 24 28	96 07 00	-	Do.
Huppan-kutey prairie, left bank, 1 mile above American Fur Company's trading house	42 44 25	6 26 47.4	96 41 5[illegible]	-	Do.
Ponkah river, 1 mile below the mouth, left bank of Missouri river	42 50 00	-	-	-	Do.
Nawizi river, near the mouth	42 51 40	-	-	-	Do.
Wicha Pahah, or Scalp Mountain creek, 2 miles above the mouth	43 08 33	6 34 28	98 37 00	-	Do.
Rantesha Wita, or Red Cedar island, lower end, opposite Bad creek	43 14 24	6 35 11	98 47 45	-	Do.
Sailor island, 1 mile below	43 38 04	6 36 32	99 06 00	-	Do.
Mankizita or White river, the mouth	43 41 00	6 36 48	99 12 00	-	Do.

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* Years 1836, 1837, 1838, 1839, and 1840.

CATALOGUE—Continued.

Places of observation.	North latitude.	Longitude in time.	Longitude west of Greenwich.	When observed.*	By whom observed.
	° ′ ″	h. ′ ″	° ′ ″		
Lower island, or beginning of the Great bend - - -	44 09 00	6 37 20	99 20 00	-	J. N. Nicollet.
Dry Wood river, one mile below the entrance - - -	44 07 31	6 38 06	99 31 30	-	Do.
Fort Pierre Chouteau, on the right bank - - -	44 23 28	6 40 50	100 12 30	-	Do.
Route from Fort Pierre Chouteau to Mini Wakan lake, through the basins of Tchan-sansan and Shayen-oju rivers.					
Western slope of the Coteau of Missouri, 6 miles from the topographical encampment, 6th July, 1839 - - -	44 51 11	6 36 18.4	99 04 36	-	Do.
Encampment (8th July) on Wamdushka, or Snake river -	45 04 06	6 34 46	98 41 30	-	Do.
Tchanrarah-chedan lake - - - - - -	45 10 18	6 33 56	98 29 00	-	Do.
Otuhu-oju or Oakwood settlement, or *Talle de Chêner* of the French, on Tchan-sansan river, at the old trading house -	45 16 34	6 32 31	98 07 45	-	Do.
Pey river, or Elm river, or *rivière aux Ormes* of the French, near the mouth - - - - - - -	45 36 02	6 32 18	98 04 30	-	Do.
Encampment 16th July, 1839, on Tchan-sansan river, (*rivière Jâques* of the French) - - - - - -	45 58 26	6 31 36	97 54 00	-	Do.
Encampment 17th July, on Tchan-sansan river, at Two Forks - - - - - - - -	46 09 00	6 31 25	97 51 15	-	Do.
Crossing place on Tchan-sansan river, near Butte aux Os -	46 27 37	6 32 32	98 08 00	-	Do.
Tampah creek or Birch creek, 3 miles above its entrance into Shayen-oju river - - - - - -	46 41 57	6 31 17	97 49 15	-	Do.
Mouth of first Bald Hillocks river, (*rivière aux Buttes Pelées* of the French) - - - - - - -	47 08 47	6 31 14	97 48 30	-	Do.
Lake Jessie, (*Lac des Bois* of the French,) the high point -	47 32 32	6 32 07	98 01 45	-	Do.
Crossing place on the Shayen-oju, mouth of Beaver Lodge river - - - - - - - -	47 46 29	6 32 54	98 13 30	-	Do.
Mini Wakan, or Devil's lake, 1st station, on southwest shore	47 55 58	6 34 21	98 35 15	-	Do.
Do do 2d station, on south shore -	47 59 29	6 33 52	98 28 00	-	Do.
Do do 3d station, at the southeast end	47 54 39	6 33 32	98 23 00	-	Do.

Route from Mini Wakan to the head of the Côteau des Prairies.					
Wamdushka lake, (*Lac des Chicots* of the French,) north-west end - - - - - - -	47 49 38	6 32 54	98 13'30	-	Do.
Crossing place of a creek emptying into Shayen-oju river, left bank - - - - - - -	47 46 30	-	-	-	Do.
Encampment 8th August, 1839, on the north fork, at the head of Grouse river, or *rivière aux Outardes* - -	47 41 02	6 29 53	97 28 15	-	Do.
At noon, 9th August, 1839, on the middle fork, at the head of Grouse river - - - - - - -	47 35 00	-	-	-	Do.
Encampment 9th August, 1839, on the south fork, at the head of Grouse river - - - - - -	47 26 26	6 29 58	97 29 30	-	Do.
Encampment 10th August, 1839, on the north fork, at the head of Elm river - - - - - -	47 13 10	6 29 58	97 29 30	-	Do.
Crossing place on the Shayen-oju river, 14th August, 1839	46 34 10	6 30 20	97 35 00	-	Do.
Top of Dead Colt hillock, or *Butte du Poulain Mort* of the French - - - - - - - -	46 16 30	6 30 15	97 33 45	-	Do.
Four Hillock lake, or *Lac des Quatre Buttes* of the French	46 01 11	6 29 27	97 21 45	-	Do.
Cold Spring lake, on Tchan-kasudata river, or Sioux river -	45 29 46	6 28 50	97 12 30	-	Do.
Encampment 23d August, 1839, on two lakes northeast of Big Stone lake - - - - - - -	45 18 40	6 25 20	96 20 00	-	Do.
Sundry positions in the south part of the State of Missouri, &c.					
St. Mary's College, Perry county - - - - -	37 43 57	-	-	-	Do.
Fredericktown, Madison county, Catholic church - -	37 34 24	-	-	-	Do.
Old Mine village, Washington county, Catholic church -	38 00 57	-	-	-	Do.
In State of Arkansas.					
Little Rock city, new State house - - - -	34 45 24	-	-	-	Do.

APPENDIX.

No. 1.

WASHINGTON, *October* 20, 1843.

SIR: I have the honor to state that the iron beacon at the harbor of Black Rock, Connecticut, is completed, and I submit herewith a report upon the same.

The harbor of Black Rock lies about 18 miles westward of New Haven; it is accessible at extreme low water for vessels drawing 10 feet, and at high water it may be entered by vessels drawing from 16 to 18 feet. As a harbor of refuge, it is more resorted to, perhaps, than any other on the sound, the depth of water being sufficient in all cases for that class of vessels which are usually employed in the navigation of this great thoroughfare.

In 1829 a beacon of stone was built at this place, under the orders of the Treasury Department, at a cost of about $6,000; this beacon was entirely destroyed by a gale of wind in less than one month after it was erected. In the year 1835 it was rebuilt, at an expense of nearly $9,000; in the spring of 1836 it was injured by a gale of wind so seriously that in all probability it would have been entirely demolished by the recurrence of the first heavy gale; it was then repaired, with a guarantee from the contractor that he would maintain the beacon in its position for a period of five years; this was effected, at a cost to the United States of $6,500. One year after the expiration of this guarantee (in 1842) the beacon was again so much injured by a gale of wind that the whole structure must have fallen, had not the long stone of which the upper part of the beacon was constructed been held together in place by the wooden spar or mast which was used for supporting the cask; the stone were laid around this spar, and it served to prevent them from separating from each other. Thus it will be seen, that within a period of 12 years three stone beacons have been destroyed at this place, and that the cost to the United States has been upwards of $21,000.

In March, 1843, an appropriation of $10,000 having been made by Congress for rebuilding the Black Rock beacon, the Secretary of the Treasury, as you are aware, applied to the Secretary of War to allow this beacon to be constructed under the direction of the Chief Topographical Engineer; by your orders, this work was intrusted to my superintendence, and I have the honor at this time to submit a detailed description of the same.

The beacon stands one mile and a half south of the entrance to the harbor, and is exposed to all winds from east-northeast around by the south to west-southwest; from the east it is entirely open to the rake of the sea for a distance of 60 miles.

When the first beacon was built, in 1829, a large quantity of rubble stone was carried in vessels to the proposed site, and then thrown into the water around a single rock called the "Old Huncher," and upon which there had been an iron spindle in former years. This rock was conical in shape, about four feet in diameter at top, and bare at very low water; upon this loose stone, thus deposited, the superstructure was reared, and, when the beacon was overthrown, the materials of which it was composed were of course added to the rubble stone bed, and they in turn became the foundation for the beacon of 1835.

In the examination which I made of the site in June, preparatory to making the final plan for the iron work, I ascertained that the stone below

low water had, apparently, remained unmoved for a long time; and I subsequently found, by inquiring of Captain Wilson, the contractor who had repaired the beacon in 1836, and who had maintained it in repair for five years, that such was the fact, while, as he stated, and it was evidently true, the stone between low water and high water were thrown about by the force of the sea in every gale. This was fully exemplified, too, by the appearance which the injured part of the old beacon presented. The base in that part below low water was entirely undisturbed, the breach being between high and low water mark; all the stone below low water remains, as stated by Captain Wilson, as they were when the beacon was repaired in 1835.

There being no stone of sufficient size at the old beacon into which the iron shafts of the new structure could be secured, I found it necessary to procure elsewhere such as were suitable for the purpose, and to transport them to the site, and imbed them below the line of low water, in order that the sea might not disturb them after they should be laid.

Description of the stone foundation.—The beacon, according to the general plan which I had made and submitted to you on the 20th April last, was to be elevated 36 feet; and for this height I decided to give the iron shafts a spread or base of 16 feet, with an inclination towards the centre of about one to six. In order that there should be sufficient strength in the stone to resist any tendency there might be to fracture at the holes which were to receive the feet of the shafts, I adopted the dimension of 20 feet as a suitable diameter for the stone bed designed for the shafts to be secured to; this dimension gave a distance of about 2½ feet from the centre of the shaft holes to the edge of the stone at top, while at the bottom of the stone, where the strain is less, it would be two feet. The bed, then, is composed of 6 pieces of hammered granite, 2½ feet thick; the middle stone is round, and is 8 feet in diameter; the 5 outer stones are 6 feet wide by about 12 feet in length, each stone weighing nearly 12 tons; the stones are cramped and dowelled together with 1½ inch round copper, 2 at each joint, the cramps 2 feet long, and the dowels 10 and 12 inches long. The excavation, which was made in what may be called the artificial island, (for at low water an extent of 105 feet from east to west, and 88 feet from north to south, is exposed,) for the reception of the stone bed, is a few feet northwest from the old beacon; it was 26 feet in diameter, and 3 feet below *ordinary* low water. When the excavation was completed, a layer of concrete, composed of 5 parts of hydraulic lime to 8 parts of sand, was spread over the bottom of the pit, by means of a trough of wood, for the foundation stone to rest upon. After the stone were laid, which was effected by means of a heavy pair of shears and a "lewis," the unoccupied space in the pit, around the outside of the stone bed, was filled with concrete and rubble stone flush with the top of the foundation stone. As it was only at or near low water that this part of the work could be carried on, that is to say, ordinarily about 3 hours per day, in good weather, considerable time was necessarily consumed in getting in the foundation. From the day the shears were erected to the day the stone work was completeted was just 5 weeks.

Description of the iron work.—The figure of the beacon is that of a truncatad pyramid. It is formed by six wrought iron shafts, five of them thirty-six feet seven inches in length, standing in the periphery of a circle of sixteen feet diameter, and one, thirty-six feet long, at the centre. The outer shafts incline towards the middle, in such proportion as to fall at the top within the circumference of a circle of three feet diameter. Each of these shafts is composed of two pieces of equal length. The diameter at foot of the lower piece is five and a quarter inches, and at top four inches. The diameter of the upper piece is four inches at foot and three inches at top. They are united by a cast iron socket of three feet in length, two and a half inches thick at the joint of the shafts, which is at the middle of the socket, two inches thick at the top and bottom, and one inch thick elsewhere. The top of the lower shaft is made concave, and the bottom of the upper shaft convex, fitting one into the other. At the distance of one foot from the joint of the shafts, a steel key, two inches deep, by three-quarters of an inch wide, passes through the socket and each shaft, to secure them together. The sockets inside, and eighteen inches of the end of the shafts, are turned and accurately fitted to each other. At a distance of two and a half feet from the foot of the lower shafts are four shoulders, one foot long, and projecting at the lower extremity one inch from the shafts, to form points of support for the same at the surface of the foundation stone. Above and below the joints of the shafts, and at distances of nine feet and eighteen feet, respectively, above the top of the stone, are two sets of braces, extending from the middle shaft to each outer shaft, and from one outer shaft to another, making ten in each set. These braces are of wrought iron, two and a half inches square. The extremities are secured by one and a quarter inch screw, bolts to cast iron collars. These collars are strengthened by two wrought iron bands, and are firmly attached to the shafts by steel keys. The space between the collar and shaft, and between the keys, is filled with zinc. The braces are secured to the collars in such a manner that they serve for ties in case of any unforeseen strain acting from the interior of the beacon, such as might possibly be occasioned by ice or any other floating body.

The tops of the shafts are provided with shoulders, to support a cast iron cap, composed of five arms, each three feet in length, and four inches in width, strengthened by a rib or flange of three and a half inches in depth. The shafts pass through this cap eighteen inches from the centre of it, and are there keyed in place. A wrought iron band, three inches wide, and one and a half inch thick, is shrunk upon the extremities of these arms, to add to its strength. From the ends of the arms of the cap, three feet from the centre, braces of two inch round iron descend four and a half feet to the main shafts, and are there secured by screw bolts passing through their extremities, and through the shafts also. At this junction of the braces with the shafts, a wrought iron band, similar to that which encircles the cast iron cap, is fitted and bolted. At a distance of four and a half feet, again, below this second band, is a third band, similar to the two others, and similarly secured by screw bolts through the shafts; finally, there are ten panels or gratings, four and a half feet long, corresponding in shape and dimension with the spaces found between the shafts and the wrought iron bands. These gratings are made of boiler iron 3-16th of an inch thick, with eight horizontal and three vertical slats or bars, three inches wide, riveted together. The horizontal slats are three inches apart; but, at the distance of five hundred yards, the top of the beacon presents the appearance of an opaque body, nine and a half feet long by six feet wide at the top and bottom, and four and a half feet wide midway of the same.

The feet of the iron shafts penetrate the stone foundation 2½ feet, and are secured in their places by heavy iron wedges, fitted to the unoccupied spaces between the sides of the holes in the stones and the shafts. The holes being inclined, and the braces between the shafts being immovable, it is evident that the feet cannot be withdrawn from their places without rupture. Now, the braces are of 2½ inch square iron, and the thickness of the stone outside of the hole is 2½ feet, and this would seem to present sufficient strength to resist a shock from any ordinary cause.

In addition to the concrete around the outside of the stone, the cramps and dowels to secure the same together, there are 5 iron ties of 1½ inch diameter, extending from a collar of 2-inch wrought iron which surrounds the middle shaft, to each of the outer shafts, to which they are firmly and securely attached, by means of heavy iron stirrups; the ends of the ties are finished with screws and nuts, and by this means can be kept in a constant state of tension. This arrangement was resorted to as an additional means of preventing any tendency there might be in the outer foundation stone to separate themselves from the middle stone.

The beacon, as finished, stands 34 feet above low water, and 3 feet higher than the old beacon; the cage or grating is painted black, and the shafts vermilion red. A model of the work, upon a scale of one inch to a foot, will be deposited in the bureau; this, with the accompanying plan in detail, will convey all the information in reference to the construction which may be required.

The iron work was executed in Boston, by Messrs. Cyrus Alger & Co., under the immediate superintendence of Mr. Lester; the entire weight is upwards of 19,000 pounds.

The foundation was prepared, and the beacon erected in place, by Mr. Benjamin Pomeroy, of Stonington, Connecticut, under a contract made with him for that purpose.

The entire cost of the iron work and foundation was about $4,600, and the time consumed in the construction was three months.

I had it in contemplation at one time to coat the inner work with zinc, by means of electro-galvanism; but I found that too much time would be required for preparing the necessary tanks and apparatus. I venture, however, to hope that another occasion may present itself, and that in the more important structure of the "screw-pile light," (which, I trust, I shall one day see executed upon our shores,) the galvanizing process may be successfully applied.

In conclusion, I beg to call your attention to one or two of the more important advantages which this application of one of the principles of Mitchell's screw-pile to the construction of light-houses and beacons presents.

In a very exposed situation, a light or a beacon, if built by masonry, can only stand when the best description of work is introduced; this, of course, involves great expense and much time. The mode of construction for such situations must, in principle, be similar to that adopted for the Eddystone and Bell Rock lights; and this, as all know who understand the subject, would, in the case of our own coast, present an insuperable objection: for example, the Bell Rock light, on the coast of Scotland, cost £360,000 or $1,800,000, and four years were required to build it; this, too, in a situation where the rock upon which it is placed is bare at low water. The Eddystone was neither so costly, nor did it require so much time to complete it, still ——— dollars would with us justly be considered out of the question for a single light.* There are many places upon our coast at which the "screw-pile light" could be erected at a very moderate cost, far less, indeed, than that of a light-ship; notwithstanding this, there are at this time not less than five floating lights in Pamlico sound, on the coast of North Carolina. The Middle Ground, in Long Island sound, upon which there is only 3 feet at low water, and at which a light-boat is now maintained, is, of all others, the most suitable point to make the first experiment upon with this description of light.

In reference to the durability of wrought iron exposed to the action of sea water, I have not a great deal of information to impart; still I have some which bears upon this question. Upon many of the reefs in Long Island sound, and more particularly in Fisher's Island sound, it has been the practice, for many years, to erect wrought iron spindles, of about 4 inches diameter, and from 15 to 25 feet in height; such spindles last from 15 to 20 years, unless carried away by ice. The contractor, who placed several of these spindles, informed me that one upon a reef in Fisher's Island sound had been up 20 years without being renewed; the wasting takes place principally between high and low water, and in this particular case the size of the spindle is reduced from 4 to 2 inches in diameter.

If, however, the zincing process, or if a precipitate of copper be resorted to, there is every reason for believing that the iron thus protected would last twice or three times 20 years.

In short, economy in cost and in time, and the application of the principle of the screw pile in situations where masonry could not be resorted to without inordinate expense, would seem to be advantages in themselves sufficient to justify extensive experiments in a branch of the public service of such importance as that of our light-house system.

Very respectfully, your obedient servant,

W. H. SWIFT,
Captain Topographical Engineers.

Colonel J. J. ABERT,
Chief Corps Topographical Engineers.

No. 2.

EXTRACTS FROM A PRELIMINARY REPORT ON THE IMPROVEMENT OF THE WESTERN RIVERS, BY LIEUTENANT COLONEL S. H. LONG, TOPOGRAPHICAL ENGINEERS.

OFFICE W. R. IMPROVEMENTS,
Cincinnati, September 1, 1843.

SIR: In obedience to your instructions issued on sundry occasions since the 22d of February last, and agreeably to which I have been charged with the supervision and direction of the various works of improvement required to be done on certain Western rivers, it becomes my duty, at this time, to report on the condition of the rivers alluded to, and on the progress made in the improvements undertaken therein, in so far as they may have come under my observation; also on the course proper to be pursued hereafter in prosecuting this branch of the United States service.

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* The Car Rock beacon, on the coast of Scotland, cost $25,000; six years were required for the construction. It was intended to build it entirely of stone; but, when half finished, the upper part was constructed of cast iron. The cast iron beacon on York ledge, Maine, is an exact copy of the Car Rock beacon; it cost $10,000.

I shall accordingly premise with a brief description of the several rivers specially claiming my attention; after which, I shall endeavor to exhibit, in a manner as succinct as practicable, all the details relating to their improvement, that I have been able to collect, both from observation and inquiry, which, I must be permitted to add, have been greatly restricted, in consequence of the unusual high stages of water which have prevailed during the period of my supervision.

The rivers specially assigned to my care and supervision are, the Ohio below the falls at Louisville, the Mississippi, the Missouri, and the Arkansas rivers; together with an inspection of the works in progress, under the direction of Captain Sanders, on the Ohio above the falls. To these I shall take leave to add the Tennessee river; its claim to immediate attention being of the first importance, by reason of the relation it bears to the great thoroughfare that ought speedily to be opened between the immense basin of the Mississippi and the southern Atlantic coast.

In treating of the character of the rivers above mentioned, and of their capacities for navigation, all that is advanced must unavoidably be of general import, by reason of an almost utter destitution of facts developed by instrumental surveys and of other statistical information touching their condition, their periodical changes, and the state of their commerce and navigation.

The Ohio river.

This noble stream, measured along its main low-water channel, from its head at Pittsburg to its mouth at the Mississippi, has an extent of at least one thousand miles, and probably much greater. It meanders in a valley varying in width from four hundred yards to a mile, while the width of its ordinary channel is from three hundred to one thousand yards. Its valley is bounded by abrupt hills or bluffs, occasionally faced with rocky precipices, which rise to the height of three or four hundred feet on the upper portions of the river, but gradually decrease in height as we approach its mouth, where the uplands seldom attain an elevation greater than fifty to one hundred feet. Its bed and the sides of its channel present frequent stratifications of limestone and sandstone, for seventy or eighty miles below Pittsburg, and through this distance has generally a greater declivity, and its current is of course more rapid, than below. As we descend, however, rocks become less frequent in the channel, and the current less rapid. That the entire bed of the Ohio is every where underlaid with rocky stratifications, there can be no doubt; but in most places, especially in the lower portions of the river, these stratifications are so deeply covered with bars of gravel, sand, or mud, that they are of no avail as foundations for structures, such as dams, jettees, &c., intended for the improvement of its navigation.

The fluctuations of the Ohio, occasioned by periodical and other freshets, are excessive, the range from the lowest to the highest on different parts of the river having been known to vary from thirty-five to sixty-four feet. In very high freshets, most of the valley land situated between the river hills is subject to overflows to greater or less depths. Ordinary freshets, rising from eight to twelve feet above low-water mark, on all parts of the river, are of frequent occurrence, and a depth of three feet on the shoalest bars generally prevails during three-fourths, and occasionally during almost the whole of the year.

The low-water stages generally occur in the months of August and September, and occasionally prevail through the autumnal season, sometimes continuing even to the middle or last of February. During the latter portion of this period, covering a lapse of from six to nine or ten weeks annually, the navigation is obstructed by frost, the river being usually icebound during greater or less proportions of the months of December, January, and February.

In the language of the very able memorial of the citizens of Cincinnati to the Congress of the United States, dated December 21, 1842, "the majestic Ohio, in its low-water stages, dwindles to a small stream, and becomes comparatively useless. Among the hills of Pennsylvania and Virginia, it is seen rippling over bars of gravel and ledges of rock, across which boats of the lightest burden with difficulty find a passage. Further down, a series of sand bars, extending in some places from shore to shore, and in others projecting from the margin of the river far into its bed, render its navigation almost impracticable. Steamboats, constructed for the purpose, and navigated by skilful pilots, ply at this season with difficulty. Many are grounded upon the bars, from which perilous situation some are relieved by great labor, attended with serious delay and expense, while others remain exposed to the elements during the residue of the season, and are either lost or seriously injured."

With respect to the character and extent of the improvements of which the Ohio is susceptible, in so far as relates to the establishment of a permanent low-water channel, the construction of wing dams, jettees, &c., having for their object the concentration of the entire low-water volume into a single channel of moderate width, together with the reduction and removal of all bars, rocks, logs, &c., in the way of such a channel, seems to embrace and constitute the only feasible and economical means of improvement that can be applied in this river with a fair prospect of beneficial results. The extent to which improvements of this character may be successfully carried, or, in other words, the depth that may be permanently secured and maintained in the low-water channel by the means just mentioned, is a problem of difficult solution.

Judging from appearances on the bars and shoals of the Ohio, both above and below the falls at Louisville, and from the low-water depths in the basins or pools intervening between them, I feel warranted in the opinion that a permanent low-water depth of two feet across all the bars and shoals of this river may be obtained at an expense that may fairly be deemed moderate and reasonable; while, at the same time, I think the practicability of securing a greater depth in extreme low water very doubtful, if not quite hopeless, in the use of any means that can at present, or for many years to come, be applied to the attainment of such an object.

Experience, which is the surest and safest guide to improvements, is daily showing the propriety and utility of enlarging the bearings or horizontal dimensions of steamboats, and of reducing their depth, in order that their tonnage or their capacity for freights and passengers may remain the same, while their draught is greatly reduced. Steamboats of 60 to 100 tons burden have been constructed with a draught, when loaded, not exceeding twenty inches or two feet; and no doubt is entertained that boats of much heavier burden, and of the same or even a reduced draught, can and will shortly be built and brought into general use. With such boats, a continued navigation may be kept up on the Ohio, interrupted only during the prevalence of ice in the river.

Agreeably to a tabular exhibit of Captain Sanders, who has in charge the improvements now in progress on the Ohio above the falls, there is no less than about seventy different points on that part of the river at which improvements of some kind or other are required, in order to facilitate low-water navigation. The exhibit alluded to is appended to a report of Captain Hughes, on an examination of the Ohio river made by the latter in October and November last, to both of which I beg leave to refer, for numerous interesting and instructive details in reference to the nature and extent of the obstructions on that river, and the best method of removing the same. (See House document No. 50, 27th Congress, 3d session.)

The improvements now in progress, under the direction of Captain Sanders, above the falls, consist of wing dams, jettees, &c., to be constructed at the following points, viz:

At White's ripple and trap - - -	11	miles	below	Pittsburg.
Black's island - - - -	54	do	do	do.
Brown's island - - - -	61	do	do	do.
Mingo island - - - -	69	do	do	do.
Captina island - - - -	107	do	do	do.
Fish Creek island - - -	113	do	do	do.
Petticoat ripple - - - -	147	do	do	do.
Blannerhassett's island - - -	185	do	do	do.
Buffington's island - - -	214	do	do	do.

To the above may be added an experimental bush or brush dam at Marietta, having for its object the diversion of the main channel of the river from the Virginia side to its former position on the Marietta side of the river.

The commencement of these several works was unavoidably postponed to a late date in the season, by reason of the prevailing high stages of the water. On the same account, an inspection of the progress made in the works could not be had in season for this report.

Below the falls of Louisville the river is generally much wider, and rocks occur much less frequently at the sides, and especially at the bottom of its channel, than above. Its broad bed, particularly in the vicinity of islands, which are more numerous in the lower than in the upper portions of the river, abounds with shoals occasioned by bars of sand and gravel, across which the extreme low-water depths do not exceed twelve to fifteen inches in the deepest channels. These bars, together with the snags and sunken logs imbedded in them, constitute the principal obstructions to navigation on this part of the river.

The improvements projected for the purpose of remedying the difficulties just mentioned consist in the extraction of the snags, &c., from the bed of the river, and the erection of wing dams, jettees, &c., for the purpose of concentrating the water of the rivers into a single channel of reduced width and increased depth. The former has been carried on to a very considerable extent and advantage, and still requires to be prosecuted with perseverance, in order to keep the river free of such impediments; and the latter has been adopted at several points with an efficiency in some instances unquestionable, and in others doubtful.

The first wing dam erected in the Ohio river, for the purpose of deepening a channel across a sand bar, was constructed at Henderson's island, in 1825, two hundred miles below Louisville, under my direction. According to all accounts, it has produced the desired effect—from that time to the present, the channel across the bar at that place, in extreme low water, having had a depth of only fifteen to twenty inches prior to the erection of the dam, and subsequently a depth of two and a half to three feet. This structure consists of parallel string timbers, bolted together, with plank or puncheon piling driven between them into the bed of the river beneath, forming a line of dam about a quarter of a mile long. Immediately below the line, and in connexion with it, was a sort of frame work of piles, strings, ties, &c., which was filled with brush, serving as a receptacle for alluvial deposites, and which afterwards became replenished with sand and mud. Its cost was about $3,000, which, inasmuch as it was the first experiment of the sort ever tried on the river, may be regarded as very moderate. My report on this work, together with explanatory drawings, was rendered in February, 1826; and to these I beg leave to refer for more satisfactory details in relation to its construction.

Stone dams or dikes have been constructed at great expense, under the direction of Captain Shreve, at the following points, viz:

At French island	165	miles	below	Louisville.
Scuffletown bar	175	do	do	do.
Three Mile island	180	do	do	do.
Cumberland island	330	do	do	do.

The character, magnitude, and cost of these several works have no doubt been fully explained in the reports of Captain Shreve, none of which are at my command. To these reports I beg leave to refer for any detailed information that may be required in reference to these improvements, as also to those that have been made at the Grand and Little chains of the Ohio, eighteen to twenty-eight miles above the mouth of this river.

Of the efficacy of the improvements already made at the several points above enumerated, or of the propriety of making any additional improvements thereat, I am unable at present to give an adequate opinion, having been prevented from making any suitable preliminary examinations by reason of the elevated stages of the river; and I take this opportunity to remark, that no correct and well-authenticated views can be given in reference to these interesting and intricate topics, till careful surveys and soundings, together with drawings explanatory of the same, shall have been made of the several positions just enumerated. The surveys, &c., in question cannot probably be executed at a cost less than $3,000.

The work in progress on the Ohio below the falls consists in the removal of snags, logs, &c., from the bed of the river. Most of the obstructions of this character have been removed from the general bed; others remain to be operated on in the low-water channels as soon as the river shall have subsided sufficiently for this purpose, and the new steam machine boat, now being built, shall have become completed and ready for operation, which is expected to be the case at the present time.

We shall conclude our remarks under this head with a brief exhibit of the declivities or descent of the Ohio and Mississippi from Pittsburg to tide water, so far as intelligence of this sort may be gleaned from levels taken for canals, &c., in this part of the country.

The surveys for the Grand canal of New York give, for the elevation of Lake Erie above the tide water, 565 feet; those for the Pennsylvania canal, from Lake Erie to Pittsburg, give, for the elevation of the latter above the former, about 140 feet; accordingly, the elevation of Pittsburg above tide water is 705 feet.

Table exhibiting the elevation of sundry points on the Ohio and Mississippi rivers above low water; the distance between these points; the aggregate descent and the average descent per mile for those distances.

Positions at the termini of sundry canals.	Elevation above tide water.	Distances from point to point.	Aggre'e descent from point to point.	Average descent per mile.
	Feet.	Miles.	Feet.	Inches.
Pittsburg, on Pennsylvania canal - - - -	705			
Mouth of Big Beaver canal - - - -	671	26	34	15 7-10
Marietta, Muskingum canal, Ohio - - -	567	150	104	8 3-10
Portsmouth, Erie canal - - - - - -	471	176	96	6½
Cincinnati, Miami canal - - - - - -	432	106	39	4 2-5
Evansville, Central canal, Ind., including falls at Louisville	320	321	112	4 1-5
Evansville, Central canal, Ind., exclusive of falls at Louisville	320	318	88	3⅓
New Orleans, Tidewater - - - - - -	–	1,226	320	3 1-5

From an inspection of a table, furnished by Captain Sanders to Captain Hughes, and inserted in the report before cited, (see Ho. Doc. No. 50, 27th Congress, 3d session, pp. 30 to 36,) it appears that there are several passes of very considerable extent, at which the descent is at the rate of almost five feet per mile. It moreover appears, from the testimony of numerous navigators of the Ohio, that steamboats of ordinary speed are able to stem the currents at all of these passes without serious difficulty. Even the rapids at Letart's falls, where the river descends at the rate of about six feet per mile, through a distance of more than a quarter of a mile, are often surmounted by steamboats in a low stage, without the aid of warps. Hence we may safely infer that, in low stages of the water, (the current being retarded by its collision against the bottom and sides of the channel,) loaded boats may readily ascend a series of rapids, the declivity of which does not exceed four or five feet per mile, provided there is a sufficient depth of water in the channel to admit of their passage.

Should a question arise as to the practicability of ascending the rapids at Louisville by means of steam power applied to paddle wheels, in a very low stage of the river, a negative answer may unhesitatingly be given; for at that place the distance is less than two miles, through which the water must be conveyed from the upper to the lower level, and the aggregate fall twenty-two to twenty-four feet, giving for the descent per mile at least eleven or twelve feet, which is a declivity unquestionably too great to be overcome in this way by loaded boats.

The Mississippi river.

This unrivalled stream is usually divided into two distinct portions, denominated the upper and the lower Mississippi; the former situated northwardly of the mouth of the Missouri, and the latter southwardly of the same point, and serving as a continuation not only of the upper Mississippi, but of the Missouri, to which last it is more nearly assimilated, not only in the character of its water, but in the violence of its movements.

The upper Mississippi.

This part of the river is said to be navigable for boats of one hundred and fifty to two hundred tons burden during seven or eight months in each year, from the mouth of the St. Peter's to that of the Missouri, about six hundred and fifty miles. It is characterized for the most part by a broad river way and sandy bed, profusely studded with islands of all possible forms, and many of them of very large size. From Lake Pepin, which has not inaptly been characterized as an enlarged part of the river, of which "the bottom has dropped out and the island dropped in," to the head of navigation, the stream is narrow, destitute of islands, and bounded for the most part by rocky shores. Above the lake the river valley is generally narrow, and bounded by abrupt hills, two to four hundred feet high, and frequently faced with rocky precipices; below, the valley spreads much wider, is bounded by similar hills and precipices, but of less height, and embosoms extensive tracts of rich alluvial bottom lands.

The obstructions to its navigation consist of shoals, occasioned by extensive beds of sand, and of two remarkable rapids, occasioned by rocky bars many miles long and of considerable declivity, over which, in a low stage, the water passes in a thin volume and with a rapid current. To these may be added, occasional snags, sunken logs, and impending trees, as also the frosts of winter, which usually prevail two to three months. Of the rapids we shall treat more particularly in the sequel. Of the other obstructions, no doubt is entertained that they may be so far conquered, at a comparatively moderate expense, that boats drawing two to two and a half feet may pass them in the lowest stages of the river.

With the exception of the rapids of Des Moines and Rock Island, which have an aggregate fall of about fifty-four feet, the descent of the Mississippi from St. Peter's to the mouth of the Missouri, judging from its current generally, may be estimated at three to four inches per mile, giving, for its aggregate fall in the distance above stated, inclusive of the rapids, about 243 feet.

With regard to methods and plans of improvement adapted to the numerous shoals and bars on this part of the river, none can be judiciously devised, and none should be offered till careful examinations, surveys, and soundings, shall have been made in a low stage of the water, and accurate data thus obtained as preliminaries to a proper system of improvements. The execution of all the surveys, drawings, &c., required for this purpose, will unavoidably be attended with much expense of time and labor. For the partial attainment of this object, especially in so far as relates to the more difficult passes, I take leave to recommend an appropriation of $3,000.

The lower Mississippi.

The length of this portion of the Mississippi, which extends from the mouth of the Missouri, 18 miles above St. Louis, to the Gulf of Mexico, is 1,330 miles, the distance to New Orleans being 1,226 miles. It differs from the Ohio and upper Mississippi, not only in the magnitude of its volume, but in the turbidness of its waters, the turbulency of its current, the abrasions of its banks, the changes of its channel, the general character of its bed, and the width of its valley. Between the mouths of the Missouri and Ohio its valley varies in width from one and a half to five or six miles, embracing many extensive tracts of rich bottom land, of which the American bottom, extending from Alton to Kaskaskia, on the east side of the river; the Mississippi bottom, a few miles below, on the same side; and the Tywapatic (Tiawapitta) bottom on the west side, below the town of Commerce, are the most considerable. The valley is every where bounded by river hills, in the form of bluffs, which frequently present bold and precipitous fronts at the margin of the river, especially on the Missouri side. The bed of the river is generally free of rocky bars—the Grand Chain, six to twelve miles below Cape Girardeau, being the only instance of a rocky bar occupying the entire bed of the lower Mississippi. The width of the bed, where there are no islands, varies from six hundred yards to a mile; and in places where large islands occur, its width from shore to shore is often two to three miles, or more. With the exception of the Grand Chain and a few other rocky bars at the sides of the river, the entire bed is generally composed of fine sand, unctuous and adhesive mud, with occasional veins of blue clay, and stratifications of coarse sand or gravel.

Below the mouth of the Ohio the valley spreads to a much greater width, the distance across it varying from three or four to fifteen or twenty miles, and in some instances, especially below the mouth of the Arkansas, to thirty or forty miles. The only points at which the highlands are presented at the margin of the river are the Iron banks, Mills's point, 1st, 2d, 3d, and 4th Chickasaw bluffs; Walnut hills, (Natchez,) Loftus heights, and Baton Rouge, on the east, and at Helena, on the west side of the river. The channel of the river is quite as variable in width and far more changeable in its relations to the valley through which it passes than that of the river above. The changes alluded to give occasion to another striking peculiarity frequently observable on this part of the river, viz: the formation of new channels and the blocking up of old ones, as exemplified by the numerous islands formed by cuts off, and of pools, lagoons, and lakes, which are merely intercepted portions of old channels scattered in every direction and occupying every variety of position throughout the widely extended river valley; to which may be added, the countless bayous that occur below the St. Francis, and serve as channels to convey away the extravasated waters produced by high freshets.

The obstructions to the navigation of the lower Mississippi consist principally of snags, sawyers, sunken logs, stumps, trees, &c., imbeded in sand bars, wrecks of steamboats, flats, &c., lying in the low-water channel; to which we may add, trees impending from the shores, and occasional rocks at the bottom and sides of the channel. Impediments of the character above mentioned are far more numerous on this part of the river than any other river of the West, the Missouri only excepted.

The practicability of entirely reducing the number of obstructions in a course of years is rather questionable. The river is continually abrading and demolishing its banks, forming new channels, and filling up old ones. The field through which changes of this sort may be displayed is coextensive with the vast alluvial region constituting its valley, in all parts of which it has heretofore pursued its meandering course. This field is covered with a dense and heavy growth of timber trees, large quantities of which are annually undermined and precipitated into the stream, while at the same time there can be little or no doubt that the field is every where underlaid, at and below the level of low-water surface, with trees, logs, &c., as large and sound as those now standing up on the surface of the ground, and which, in the successive changes wrought in the channel, are liable in their turn to become obstructions quite as formidable as those that now exist. In view of these considerations, we have to regard efforts that may be applied to the removal of snags, logs, and other similar obstructions, as somewhat temporary, and are fully of the opinion that the benefits resulting from their removal can only be perpetuated by an application of similar efforts annually renewed, by which the dangers from them are abated as they occur.

The points on the lower Mississippi at which the most formidable obstructions are to be met with are as follows, viz:

Localities.	Nature of obstructions.
Between mouth of Missouri and St. Louis	Snags, logs, and sand bars.
Six miles below Jefferson barracks	A few snags, &c.
Turkey island, mouth of Establishment	Many snags, logs, &c.
Near St. Genevieve	A few snags and logs.
Below Kaskaskia landing	Do.
Near Pucket's wood yard	Do.
Near Hat island	Many snags, logs, wrecks, &c.
Two miles below Grand Tower	Do.
At Devil's island	Do.
At the Grand Chain	Large masses of rock.
At and near the Grave Yard	Very many snags and several wrecks.
Near Sidling island	A few snags, &c.
At the bend above the mouth of the Ohio	A few logs, &c.
14 miles below the mouth of the Ohio	Do.
At Plum point	Many snags, logs, &c.
Near island No. 34	A few snags, &c.
Near island No. 37	Many snags, logs, &c.
At Devil's Elbow	A few snags, &c.
At Council bend	Do.
At Walnut bend	Do.
At Ship island	Many snags, &c.
At island No. 65	Do.
At islands Nos. 67 and 68	A few snags, &c.
From Montgomery point to Napoleon	Do.
Near Lake Bolivar	Do.
At Choctaw bend	Many snags, &c.
At Point Chicot	Do.
At Kentucky bend	A few snags, &c.
From Princeton to Lake Providence	Do.
Thence to Millikin's bend	Do.
At Wife's island	Many snags, &c.
Thence to the mouth of Red river	Scattering.
At Raccourci bend and Barker's bar	Many snags, &c.
Thence to New Orleans	Scattering.

The old snag boats Heliopolis and Archimedes having been repaired, and in many of their parts renewed, at Paducah, near the mouth of the Tennessee river, were again fitted out for service, and commenced their operations in the lower Mississippi about the 1st of August, which was the earliest date at which the water was low enough to admit of operations upon the snags, &c.

Agreeably to the testimony of navigators best acquainted with the condition of the lower Mississippi, and particularly the depth of the water upon its bars in the lowest stage, it appears that it is navigable in extreme low water for boats drawing six feet from its mouth to Memphis, for boats drawing five feet thence to the mouth of the Ohio, and for boats of four and a half feet draught thence to the mouth of the Missouri. It appears, also, that the low stages of the river usually occur between the 1st of October and the middle of February, and that, during six or eight weeks of the latter portion of this period, the navigation above the mouth of the Ohio is liable to obstructions by ice, and which is occasionally the case, but for a much shorter period, below that point.

At all difficult or dangerous passes on the lower Mississippi careful surveys and soundings ought to be made, for the purpose of ascertaining the best low-water channels, and the nature and extent of the obstructions in the way of navigating such passes. The cost of these surveys may be estimated at $3,000.

Missouri river.

Among the rivers of ths West, the Missouri stands pre-eminent for the turbidness of its waters, the impetuosity of its currents, the changeableness of its channel, and the multiplicity of its obstructions, by snags, sawyers, rafts, sunken trees, beds of sand, imbedded logs, trees impending from the shores, &c., to which may be added ice and drifts upon its surface; the former of which prevails during the colder portions of the winter, and the latter at the period of every freshet. It is more or less swollen by freshets from about the middle of February to the last of July. The main summer flood, the highest of the Missouri freshets, invariably occurs in the month last mentioned. During the period of high water (viz: from February to August) this river is navigable for boats drawing four to five feet probably to the mouth of the Yellowstone, the distance being usually estimated at upwards of eighteen hundred miles. For the residue of the year, its navigation is more or less obstructed by shoals, and the other impediments above enumerated, to such a degree that boats drawing more than two to two and a half feet meet with difficulty in passing from the mouth of the river to Council Bluffs, about one-third of the distance above mentioned.

The valley of the Missouri is much narrower than that of the Mississippi, especially in that portion of the latter situated below the mouth of the Ohio; and its bottom lands are generally more elevated, or less subject to inundations than those of the latter. Of course, the scope to which changes in the position of its channel are confined is far less extensive, although the changes are far more frequent in the Missouri than in the lower Mississippi. In consequence, lakes, lagoons, bayous, cuts off, islands, &c., are far less frequent and of much less extent in the valley of the former than in that of the latter.

The obstructions in the Missouri are more numerous and more generally diffused than in the lower Mississippi, while the snags, logs, &c., of the former are far more obstinate and difficult of removal than those of the latter, by reason of the greater depth to which portions of them are imbedded in the bars at the bottom of the river.

One of the new snag boats (viz: the Samson) was despatched for service on the Missouri as early in July as the state of the river would admit, arrived at the place of its destination, and commenced operations early in August. It is to be apprehended that the draught of this boat, which is about 3½ feet when furnished and fitted for service, will prove too great for successful operations in a very low stage of the river, except within 150 or 200 miles of its mouth, or perhaps below the mouth of the Osage river.

Careful examinations, accompanied by soundings, ought to be made of the Missouri river, with the view of determining beforehand the points at which the snag boats can operate to the greatest advantage. The cost of such examinations may be estimated at $1,000.

Arkansas river.

Of the tributaries of the Mississippi, the Arkansas, in point of magnitude and extent, holds a rank second only to that of the Missouri; but with respect to its navigation, it is to be regarded as inferior, not only to the Missouri, but to the Red and Ohio rivers. It is only navigable for steamboats to the junction of the forks, or rather to the mouths of the Neosho and Verdigris rivers, six hundred and thirty miles upward from its confluence with the Mississippi. Above that point, (the forks,) the Arkansas spreads to a great width, occupies a broad sandy bed with low banks, abounds in shoals even in the highest stages, and cannot be regarded as navigable for steamboats more than a few miles, even during high freshets.

The valley of the Arkansas, below the forks, is comparatively narrow, as is the case also with its channel, which meanders from side to side of the valley in serpentine folds, forming numerous abrupt bends and many peninsular points. About one hundred and fifty miles above the mouth of the river its valley unites with the extensive alluvial flats of the Mississippi, through which the Arkansas pursues its crooked way, forming a junction with White river by means of a cut off twenty-five miles above the mouth of the former. Through this cut off the water passes alternately from one river to the other, as the flood in either chances to predominate.

The Arkansas is navigable for boats of heavy burden to Fort Gibson, near the forks, during the more elevated stages of water, which usually prevail from the 1st of February to the middle or last of June, and occasionally in other parts of the year, especially in December and January; but, in ordinary low water, boats drawing more than two feet cannot ascend higher than Fort Smith, and in extreme low water cannot get higher than Pine bluff, one hundred and sixty miles from the mouth of the river. From an examination made by myself many years ago, in a very low stage of the river, I am of the opinion that this river may be rendered navigable in extreme low water for boats of two feet draught, from its mouth to Little Rock, and probably to Fort Smith, two hundred and fifty miles higher, by concentrating the water at the several shoals or ripples into a single channel of moderate width.

The obstructions in the Arkansas, in addition to bars of sand, gravel, pebbles, and occasionally of rock, consist of snags, imbedded logs, impending trees, &c., to which may be added, in a very few instances, loose masses of rock, with occasional ledges on that portion of the river situated between Little Rock and Fort Gibson.

The snags, logs, &c., are said to be very numerous on most parts of the river below Pine bluff, and to render the navigation exceedingly difficult and dangerous. The new snag boat Sevier was ordered on the business of removing them early in July, and commenced operations in the Arkansas prior to the close of that month. This boat is expected to continue its operations on the river through the year, unless prevented by low water, and, in the prospect of such an event, is to be withdrawn to the Mississippi till enabled to resume operations again in the Arkansas by a rise of the river.

Nothing can be definitively stated, in regard to the deepening of the channel at the shoals on the Arkansas, till surveys and soundings shall have been made at the several bars, and data thus procured on which plans and estimates can be satisfactorily predicated. The cost of such surveys may be estimated at $3,000.

Tennessee river.

No river of the West affords greater facilities for steamboat navigation, during all ordinary stages of the water, than the Tennessee, from its mouth to Waterloo, two hundred and forty-six miles. Its course throughout this distance is, for the most part, very direct, and its channel sufficiently wide and free of obstructions. In very low water its navigation is obstructed by occasional shoals, at some of which, in an extreme low stage, boats drawing more than eighteen or twenty inches cannot pass in the present condition of the river. No doubt is entertained, however, that improvements may readily be made at a moderate expense; by means of which, boats drawing two feet may be enabled to pass at all times.

Above Waterloo are situated first Colbert's and then the Muscle shoals, within a distance of sixty-six miles, through which, with the exception of several pools of apparently still water, the river is hurried with great rapidity, the aggregate fall in that distance being more than one hundred and twenty feet. Of these shoals we shall treat somewhat more particularly in the sequel.

From the head of the Muscle shoals to the Suck, about one hundred and fifty miles, the Tennessee is quite as favorable for navigation as the portion below Waterloo. The volume of water passing in this river is copious, even in the driest season, and, by concentration, would afford a sufficiency to supply a channel at least two and a half feet deep, and wide enough to admit the passage of steamboats in the lowest stage of the river.

The obstructions at the Suck and its vicinity occupy a distance of about nine miles; this portion of the river, also, will be noticed more particularly in the sequel.

A distance of twelve miles further carries us to Chattanooga, the point at which the railroads leading from Charleston, Savannah, &c., have their terminus on this river, making the whole distance from the mouth of the Tennessee to Chattanooga about four hundred and seventy-five miles. From the Suck upward to this point, and even one hundred and ninety miles above, which is the distance to the mouth of French Broad, six miles above Knoxville, the supply of water in the river is amply sufficient in the driest time to replenish a channel, and afford navigation in the same for boats drawing two feet.

Definition of objects attainable in the use of efforts to improve the navigation of the Western rivers.

The capacities of the several rivers to which our attention has been directed, in so far as relates to their facilities for navigation, as also the necessity of works of improvement for the development of those capacities, have already been considered. It now remains that we offer some definite views in regard to the character of the vessels or craft proper to be employed in the navigation for which provision is to be made by means of improvement.

Experience, which is the safest and surest guide to improvements calculated to ensure beneficial results, seems to have shown conclusively that boats of the least possible draught, compared with their length and width, subserve the purposes of navigation on the Western rivers far better than those of deep draught and reduced horizontal bearings. It has been found that boats drawing four to six feet, when loaded with freights weighing three hundred to six hundred tons, succeed better than boats of a deeper draught. Such boats are able to ply constantly between St. Louis, or the mouth of the Ohio, and New Orleans; and, during the more elevated stages of the Western rivers, they can run to the most remote points in the West accessible to steam navigation. Boats drawing two to four feet, and freighting one hundred to three hundred tons, are better adapted to the navigation of the smaller streams of the West in high water, and can be employed to far greater advantage on the principal streams above the mouth of the Ohio, and the principal tributaries of the Mississippi, in low water, than boats drawing five to six feet. It has, moreover, been found that boats drawing about two feet, with freights of fifty to one hundred tons, are able to navigate most of the tributaries of the Mississippi to considerable distances from their mouths, in very low stages.

On the score of resistance to progression through the water to boats of light draught, both being of the same tonnage, we shall hazard the following brief remarks:

The resistance to the progress of a boat through the water or any other fluid is undoubtedly occasioned by the *vis inertiæ* and friction of the medium through which it passes. In water the former is to be regarded as a constant resistance, uniform at all depths; but the latter, viz: friction, having among the elements by which it is generated one that is variable, viz: *pressure*, must itself be variable, and of course must increase with the depth below the surface of the water at which it occurs; accordingly, the deeper the draught of the boat, other things being equal, the greater must be the resistance to its progress through the water.

The conclusion above drawn seems to be at variance with common opinion, and even common observation, in relation to the subject, for it is well known, and every where admitted, that boats of deep draught make greater speed through the water than those of light draught, the tonnage, power, &c., of both being equal.

This anomaly may be accounted for in some measure by the fact that the boat of deep draught is more susceptible of such a form and mould at its bows as is best calculated to part the water, and thereby, in some degree, obviate its resistance, than a boat of light draught. Moreover, the depth to which the paddle wheels can penetrate, and the body of water against which they can act, are much greater in a heavy than in a light draught steamer, and of course the propelling power is exerted to better effect in the former than in the latter.

A question now arises as to the practicability of remedying these defects in light draught boats. With respect to the former, a remedy seems attainable, by prolonging the boat, and making room at the bows for the application of moulds, cut-water, &c., of such form and construction as are calculated to divide and pass through the water with the least possible resistance. The latter, it is believed, may be effectually remedied by increasing the number of the paddle wheels, which may be effected by employing two side wheels, as usual in ordinary steamboats, and, in addition thereto, a stern wheel, by means of which the aggregate of the water acted upon by the wheels may be rendered equal, if not greater, than that acted upon by only two wheels dipping deeper into the water. By these means it is believed boats of light draught may be made to move with as great speed, and stem as rapid currents, as is usually done by boats of heavy draught.

Accordingly, in all we have to offer touching the low-water navigation of the Western rivers, we shall keep in view the practicability of forming and keeping open channels of a sufficient width and depth to admit the free passage of boats drawing about two feet of water, which, in the opinion of the best and most experienced judges of western navigation, is the utmost that should be aimed at in providing for a general system of low-water navigation; with such a draught and depth, boats laden with passengers, light freights, and mails, will no doubt be able to pass and repass on all of the rivers herein considered in the lowest stages of the water, and thus steamboat navigation may be maintained during the year on all parts of the rivers, except during the period when they are blocked up with ice. With these objects in view, we shall treat briefly of several of the most difficult and dangerous passes that occur on the several rivers previously designated in this paper.

Des Moines rapids.

This difficult pass is situated in the Mississippi river, about 180 miles above the Missouri, and extends through a distance of a little more than eleven miles, the bed of the river being composed of limestone in reefs and ledges through this entire distance, and the aggregate descent of the river in a low stage being here between 24 and 25 feet. At an elevated stage, when the surface water at the head of the rapids has an elevation of four feet and upwards above extreme low water at that point, boats of five feet draught can pass and repass without difficulty or hazard; but in lower stages the navigation is much obstructed by loose masses and permanent bars of rock, the passage of which is rendered exceedingly dangerous even with steamers of the highest draught. Channels of considerable depth are to be met with in almost every part of the rapids, but they are too narrow and crooked to admit of safe navigation, and are, in places, so much disconnected by intervening ledges and bars, that a continuous passage from the head to the foot of the rapids can no where be found, and no facilities are presented for passing from one channel to another in the present state of the river.

These rapids were surveyed by Lieutenant R. E. Lee, (now Captain Lee, of the corps of engineers,) in 1837, who, in a report dated on the 26th January of the following year, (see Senate document No. 139, 2d session 25th Congress,) submitted his views on the nature and character of the obstructions at this place, together with a project for opening a cont channel, at least 200 feet wide, from the head to the foot of the rapid proposed channel was to be formed by removing loose stones from the main natural channels, cutting off the points of rocky bars th jected too far into the channel, occasioning abrupt turns or flexure course, and excavating across the beds of rocks that intervened be the foot of one channel and the head of another below it, in such a ner as to form a continuous low-water passage. For more special in reference to the nature and character of these obstructions, and method of improvement recommended by Captain Lee, I take lea refer to the document above cited, and the delineations accompanyi same.

With respect to the extent of the work, and the cost of the improve proposed by Captain Lee, the amount of rock to be excavated and rem was about 95,000 cubic yards, at a cost of $2 per yard, making the cost about $190,000. Since the date of his estimate, material changes taken place in the prices of labor, and the rate of compensation dema by contractors; and there is no doubt that the amount of work, specifi above, can now be executed at a less cost.

Another method of improving the navigation of the Des Moines has been suggested, viz: that to be effected by means of locks and the cost of which cannot be estimated with any tolerable precision careful and minute survey shall have been made, for the purpose of mining with precision the appropriate positions and magnitudes of several works, comprised in such a system of improvement. Appear seem to justify the conclusion, however, that the plan of improvement posed by Captain Lee would prove less expensive, more secure fro molition by ice and other drift, and quite sufficient for all the purpos low water navigation.

The difficulty most dreaded and complained of, in allusion Captain L plan, is the impracticability of keeping up beacons or buoys, to indicate position of the channel, or the track to be pursued by boats. All objec this character are liable to be enclosed in the ice of every winter, and sw away by every freshet at the breaking up of the ice. This evil, howe might readily be remedied by buoys, slightly attached to iron rods, rend pendulous or oscillatory by means of joints at their points of attachm to the bottom or side of the channel. The buoys should either be remo every year, at the closing of the river by frost, and replaced again after breaking up of the ice, or they might be suffered to remain until their c nexion with the rod is forcibly sundered in a manner, and at a point leave the main portion of the rod in its place, and in a condition to be rai by a grapple and receive a new buoy. In this way buoys might be placed every spring after the withdrawal of the ice, and the subsidence the spring freshets.

Another mode of establishing channel marks has been suggested; th consists in the use of iron rods or steel springs, attached to the bottom the river, the former to be oscillatory like those before mentioned, an operated upon by means of a weight, fixed in a cast iron receptacle or cas at the bottom of the river; and the latter, rising some three or four feet above the surface of low water, and by reason of their elasticity, being liable to be pressed downwards and overpassed by floating ice, &c., and afterwards resuming their position as marks above the surface of the water.

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The cost of surveys required at this pass may be estimated at $2,000.

In order to exhibit more clearly the character and aspect of these rapids, I hereto annex the accompanying sketches, reduced from Captain Lee's map, and drawn on a scale of 1¼ inches to the mile. In this drawing the rapids are represented in two parts or divisions, denominated the upper and lower sections, respectively, of about equal extent; this division having been made for the purpose of introducing the whole into a single page of letter paper, on a scale sufficiently extended to show, by means of lights and shades, the relative positions of the channels, and of the rocky bars by which they are environed.

In further explanation of the drawing, I have only to add, that the *shades* represent the bars, ledges, and reefs, obstructing the passage of boats in low water; the *lights* represent the pools of deep water, and the *full red lines* represent the localities at which improvements are required, by excavations in the rocky bed of the river, and by cutting away rocky points, in order to open a channel adapted to low water navigation.

Rock island rapids.

These rapids occur in the Mississippi, at the distance of about 150 miles above Des Moines rapids, or 330 miles above the mouth of the Missouri. They have an extent of 14¼ miles, and an aggregate low water fall of about 26 feet. A careful survey of these rapids was made in 1837, and a method of improvement, devised and recommended by Captain R. E. Lee, the latter consisting in the reduction of numerous rocky points, which protrude into the natural channel, and occasion abrupt turns, and in the formation of a pretty direct channel at least 200 feet wide, by cutting away those points and removing loose masses of rock from the natural channel. Thus improved, a sufficient depth of water will no doubt be afforded for the passage of boats in all stages. The quantity of rock proposed to be excavated has been computed at about 78,000 cubic yards, and the cost of excavation at $2 per cubic yard. It is believed, however, that at the present time the work may be done at a less cost per yard. For more particular information concerning the obstructions at this place, and the manner of improving the rapids, I take leave to refer to Captain Lee's report, &c., before recited. (See Senate document No. 139, 2d session 25th Congress.)

The same difficulty exists at these rapids with respect to the establishment of channel marks, as at the Des Moines rapids, and the same method of applying beacons or buoys to indicate the channel is, of course, applicable in both cases.

In improving the channels both at the upper and lower rapids, (the Rock island and Des Moines rapids,) it is thought advisable, in many places, especially at the concave side of the channels, to apply longitudinal strings or ribbons of large and heavy timbers, in continuous lines, strongly spiked and bolted to the rocks at the side of the channel, and thus forming a guard to prevent the boats from impinging against the rocks. Appendages of this sort may readily be applied, in many places, to great advantage.

Agreeably to the surveys of Lieutenant Lee, the average descent of the river per mile, at the Des Moines rapids, does not exceed 2½ feet in extreme low water, and the maximum descent is no where greater than about 3½ feet per mile. At the Rock island rapids, the average descent is about 2 feet per mile, and the maximum, as before, does not probably exceed 3 feet per mile. Notwithstanding these declivities may be surmounted by steamboats of ordinary speed, yet it is obvious that a uniform current, and, of course, a uniform declivity, are preferable to any irregularities in these respects; and, accordingly, in any efforts at improving the navigation at these passes, care should be taken to equalize the declivity and speed of current as much as possible.

The cost of surveys at this pass is computed at $1,500.

The annexed drawing, on a scale of 1½ inch per mile, reduced from Captain Lee's map of these rapids, will exhibit their general character and aspect. The representations therein are similar in all respects to those in the sketch of the Des Moines rapids.

Falls of the Ohio, near Louisville.

The distance from the head to the foot of these rapids is about 2 miles, and the aggregate fall of the river in this distance about 22 feet in ordinary low water, or a little more than 24 feet in extreme low water, giving for the average fall per mile 11 to 12 feet, while the declivity in the most abrupt portion of the falls is not probably less than 20 feet per mile. Hence, it may fairly be inferred that the ascent of these rapids, in a low stage of the river, is utterly impracticable for boats propelled by steam power applied to paddle-wheels; nor is there sufficient space for the prolongation and consequent reduction of the declivity between the head and foot of the falls, by any practicable contortions of channel formed for this purpose, and, of course, there are no means here presented of reducing the speed of the current sufficiently to enable steamers to ascend in the manner just mentioned.

In accordance with special instructions from the topographical bureau, issued in conformity to a resolution of Congress, surveys have been commenced under the direction of Captain Cram, assisted by Allan Campbell, Esq., the object of which is to determine what is "the best mode of improving the navigation of the Ohio at the falls near Louisville, and the probable expense of such improvement."

These surveys were begun about the 20th of June, but the river being too much swollen to admit of the necessary soundings, &c., in connexion with its sides and bed, they could not be completed in season for this report.

As soon as Captain Cram shall have had sufficient opportunities to complete the surveys, prepare the proper delineations, compile and arrange the matter proper to be embraced in a report on these subjects, the results obtained will be communicated without loss of time.

Colbert's shoals.

These rapids are situated in Tennessee river, about 240 miles above its mouth, and have an extent of about 10 miles, including that portion of the river situated between Waterloo at the foot, and Colbert's ferry at the head of the shoals. The descent of the river in this distance is something more than 20 feet, giving an average of about 2 feet per mile, the greatest declivity being about at the rate of 3½ feet per mile.

Wing dams and other improvements have been made on these rapids for the purpose of forming a low water channel through them; and this object has been so far accomplished that boats of 18 or 20 inches draught can ascend in a very low stage of the river. No doubt is entertained that further improvements may be made to advantage, by concentrating the water into a single channel formed partly by excavations and partly by low walls, and that a passage may thus be opened for boats drawing two feet in the lowest stage of the river. But no project of such works, exhibiting their position, form, and extent, and no estimate of their probable cost can be given till careful surveys and soundings of this portion of the river shall have been made, and drawings, illustrative of the same, prepared.

The cost of executing the surveys required at these shoals, may be estimated at $2,000.

Muscle shoals.

These rapids, like those at Colbert's shoals, are occasioned by extensive strata of limestone, nearly horizontal, and occupying almost the entire bed of the river, which is both localities profusely strewed with loose masses of rock of greater or less magnitudes, reefs, ledges, &c., almost from shore to shore. The Muscle shoals have an aggregate length of about 36 miles, and an aggregate fall of nearly 100 feet, or an average of about 2¾ feet per mile, which very little exceeds the average descent at the several rapids on the Upper Mississippi, before treated of. There are, however, numerous points at which this average is greatly exceeded, and where the current is consequently far too rapid for the ascent of steamboats. Were it practicable to reduce the declivities at these rapid points, and thereby to equalize the speed of the current throughout the whole extent of the shoals, and at the same time open a low water channel of sufficient depth to admit steamboats of light draught, there is little doubt that the ascent of these formidable rapids, from foot to head, might be effected, in a reasonable time, by means of steam power applied to paddle wheels.

The canal constructed at these rapids, on the north side of the river, and extending from Campbell's ferry upwards, nearly 14 miles, to a point near the mouth of Elk river, has been so far demolished and swept away, in consequence of the defects in its construction, that it is now unfit for use, and cannot again be made operative without expensive renewals and repairs. The dimensions, not only of its locks but of its prism generally, were too small to admit any steamboats except those of the most diminutive size. Careful surveys will be required, in order to determine the best mode of repairing this important work, and the cost of the same, as well as to decide upon the relative cost and advantages of this mode of rendering the Muscle shoals navigable, compared with that of improvements in the natural bed of the river.

The cost of the surveys required at the Muscle shoals, may be estimated at $3,500.

The Suck, and other difficult passes in its neighborhood.

In my late report to the armory board, on the several passes here alluded to, I ventured to suggest a mode of improvement, having for its object the free passage of all the obstructions at the several points in question. The feasibility of the project, or the adoption of a more efficient and less expensive plan of improvement, remains to be tested by actual surveys. The report under consideration has been submitted to Congress, and ordered to be printed, in connexion with sundry memoirs descriptive of the sites visited by that board, with a view to the selection of a suitable site for the Western armory. To this document I beg leave to refer for all the information proper to be given on these subjects.

The cost of the surveys required at these several passes, may be estimated at $2,500.

Different modes of improvement, and their adaptation to the Western rivers.

The modes claiming attention under this head, embrace three varieties, viz: 1st. Navigation effected by means of lateral canals; 2d. Slack-water navigation, effected by means of locks and dams; and, 3d. Sluice navigation, effected by means of open channels or sluices.

Lateral canals.

As a means of improvement, generally applicable to the Western rivers, the first of these methods is unquestionably objectionable, if not utterly impracticable, on account of the necessity of locating the canal within the river valley, and conducting it across copious tributaries near their mouths, where it must unavoidably be exposed to excessive overflows and impetuous floods. There are occasional passes, however, where lateral canals may no doubt be employed to advantage, provided localities exempt from overflows, and secure from the ravages of impetuous currents, floating ice, &c., can be found for their reception. For example: the passes at the rapids of the Upper Mississippi, at the falls of the Ohio, at the Muscle shoals of the Tennessee, &c., are no doubt susceptible of improvement in this way. But the expediency of adopting lateral canals in such situations, may fairly be regarded as questionable on account of the heavy expense attending their construction, especially in situations where the average descent of the river in low water does not exceed three or four feet per mile, and where a channel can be formed, having a low water depth equal to that in the deepest channels on other parts of the river, both above and below the pass that is to be improved.

Slackwater navigation.

The second method, viz: that by means of locks and dams, is less objectionable on some accounts, but more so on others than that just considered. The locks and dams may be rendered more secure than the works of a lateral canal against the ravages of floods, drifting ice, &c., by reason of their submersion below the water surface, wherever such occurrences take place, while in most cases their cost would be far less considerable. But there are difficulties of great magnitude in the way of adopting the slackwater method as a system adapted to the improvement of the Western rivers generally. Among these difficulties, that of finding firm and substantial foundations for the locks and dams at the points where they should be located is probably the most formidable. This difficulty is alone of sufficient enormity to prevent the successful adoption of the method, except in situations where the river beds are composed of rocks.

The objections to this method consist, moreover, in the tendency it would have to annihilate low water currents, and convert a running stream into a series of stagnant pools; to prevent downward navigation by spontaneous descent, in ordinary low stages of the river, and, in such stages, to interrupt the passage of all kinds of water craft in both directions, except in so far as they may be enabled to enter and pass through the locks.

In the employment of this method, on streams affording a natural navigation worth preserving, care should be taken to limit the lift at the locks and dams to five or six feet, or less, if practicable, in order that the improvement may interfere with the natural navigation as little as possible; for the less the lift the less elevated will be the freshet that will enable boats and other craft to pass over the crests of the dams without hazard or inconvenience.

It should be distinctly understood, that the objections urged as above against slack water navigation are intended to be applied only in reference to the introduction of this method of improvement into streams affording in their lowest stages a sufficiency of water to supply artificial channels formed in their natural beds, with a depth of water across their shoals equal to that every where prevailing in the shoalest portions of their intervening basins. On the contrary, in streams comprising a series of pools, separated one from another by bars, across which the entire supply of water passes in rippling sheets, and is too limited to fill a channel of any considerable width or depth, the method of improvements by locks and dams may be employed to advantage.

In cases of the character last mentioned, the lifts of the locks may be increased to any desirable height;. and, in general, it will be found that the greater the lift the more economical the improvement. As examples of the utility and efficiency of this method of improvement, and of the signal success attending its introduction, we may cite the locks and dams erected by the State of Kentucky on the Green, Kentucky, and Licking rivers, of that State, at which the lifts of the locks vary from fifteen to eighteen feet; on the Monongahela, in Pennsylvania, and on the Muskingum, &c., in Ohio, with locks of nearly equal lift.

Sluice navigation.

This method, which consists in the preparation of sluices or channels leading across the shoals or bars, by means of which the entire volume of the water in the lowest stage may be concentrated into a single pass of determinate width and depth, next claims our attention. In accordance with the opinions of many of the best judges of Western navigation, and with the views already advanced in treating of the several rivers enumerated at the beginning of this tract, a depth or draught of two feet is the greatest that can be secured and maintained in the deepest channels leading across the shoals of those streams, respectively, in the lowest stages of their waters, and throughout the distances already assigned herein to their navigation. With respect to the width of these channels, it should never be less than 150 to 200 feet, the minimum width being such that the congregated running water of the river will give a minimum depth of at least two feet in extreme low water.

In all arrangements for the establishment of sluice navigation, the declivity of the sluices, or rather the speed with which the water may be allowed to flow through them, is a subject claiming particular attention.

Common experience on the Western rivers seems to show that the greatest average speed attainable by loaded boats of the larger classes, in their passage over deep water, does not exceed twelve miles per hour through the water; that the speed of boats of medial size, under similar circumstances, does not exceed ten miles per hour; and that the speed of the smallest sized boats, in water not deeper than three or four feet, does not exceed eight miles per hour through the water; also, that the speed of this class of boats, in their passage through water less than three feet deep, does not exceed six miles per hour. Hence we may infer that boats of two feet draught cannot make headway against a current of six miles per hour, and, consequently, that the speed of the current through the sluices or improved channels should, in all cases, be something less than six miles per hour. The declivity at which such a speed will be generated must be greater or less, according to the length and transverse dimensions of the sluice, or rather of the volume of water passing through it; the larger the dimensions, in all cases, other things being equal, the more rapid the current, and *vice versa*, the smaller the dimensions the less rapid the current.

A reduction of the speed of currents in sluices being obviously an object of importance, we take occasion to remark, that this object is attainable, in some degree, in two ways, viz: 1st, by prolonging the sluice, and, of course, reducing and extending the declivity through a greater distance; and, 2d, by laying at the bottom of the sluice, and transversely of the same, rails, split timbers, or small trees, at narrow intervals asunder, and firmly bolted, or otherwise attached to the bottom wherever the channel is deep enough for their reception. By these means, the speed of the current will obviously be retarded; the rippling or waving of the water produced by the arrangement last mentioned being virtually equivalent to a prolongation of the channel.

With a view of exhibiting a variety of examples showing the declivities of channels, the depths of water therein, and the corresponding velocities of current that have actually been overcome by ascending steamboats, of very light draught, we shall annex, in a tabular form, a series of statements, extracted from a table furnished by Captain Sanders, and appended to the report of Captain Hughes, before cited. (See Ho. doc. No. 50, 27th Cong. 3d sess., pp. 30 to 36.)

Table of declivities, velocities of current, &c., at certain shoals and rapids on the Ohio river, as determined by Captain Sanders, in 1838.

Nos. of statements.	Designation of localities.	Depths of water.	Lengths of rapids.	Aggregate fall.	Mean velocities per hour.		Descent per mile.
					By observation.	By computation.	
		Inches.	Feet.	Feet.	Miles.	Miles.	Feet.
1	Horse Tail ripple, three miles below Pittsburg - - - - -	18	1,280	2.43	2.1	3.4	10.0
2	Lourie's ripple - - - -	24	2,700	2.14	2.5	2.5	4.2
3	Duff's bar - - - -	18	4,130	2.56	2.2	2.0	3.3
4	White's ripple - - - -	26	1,938	2.64	3.0	3.4	7.2
5	Wollery's trap - - - -	16	2,300	2.41	2.5	2.4	5.5
6	Dead Man's ripple - - -	24	3,250	4.41	3.2	3.3	7.2
7	Log Town bar - - - -	17	1,930	1.94	2.2	2.4	5.3
8	Line island - - - -	24	400	1.20	4.2	4.9	15.8
9	McMahon's bar, below Wheeling -	20	2,500	2.30	2.4	2.4	4.8
10	Grove Creek bar - - -	30	1,587	1.18	3.8	2.7	3.9
11	Buffington's island - - -	18	4,080	4.13	1.6	2.4	5.3
12	Letart's falls - - - -	24	2,300	3.15	3.8	3.6	5-9

In reference to statements numbered 1, 4, 6, and 8, of the foregoing table, it should be observed that it is not known with certainty that the rapids to which they relate have been ascended by loaded boats, propelled exclusively by steam power applied to paddle wheels, in extreme low water; but with respect to other rapids noticed, such is known to have been the fact, with the exception, possibly, of Letart's falls, in the very lowest stage. Moreover, in most of the statements, there is obviously some mistake in regard to the velocities of the currents, by observation at the several passes; for it is apparent, on inspection, that the rates of velocity do not sufficiently correspond with those of declivity, as exhibited in the table. We have accordingly inserted an additional column, containing the computed velocities, which are no doubt more correct than those by observation.

The means and appliances essential to the introduction of sluice navigation on the Western rivers, and a variety of circumstances attending the same, next claim our attention, and will be considered in the following order, and under the following heads, viz:

1st. *Excavated channels.*—Under this head are comprised all sluices leading across shoals occasioned by beds of rock, gravel, sand, &c., through which channels are to be formed, either by manual or other artificial excavations, or by the washings of concentrated currents of water. Excavations through rocky bars must be effected by blasting or other forcible means, which must generally be applied beneath the surface of the water; those through indurated bars of clay, pebbles, and gravel, or of all these ingredients combined, must be formed by the process called *dredging*, carried on by the use of dredging machines, picks, crowbars, &c.; while those required at bars composed of loose sand and mud, may be effected by means of concentrated currents of water, brought to act upon the bars by the aid of a variety of structures hereafter to be noticed.

The sluice through which the water must be compelled to pass should extend in a direction as nearly straight as may be from the head of the bar to a considerable distance below its foot, and terminate, if practicable, in a deep pool at its lower extremity. Its width may vary from 150 to 200 feet or more, depending, in this respect, on the quantity of water that may be led through it; its depth, in the lowest stage of the water, should never be less than two feet, and its declivity in such a stage should nowhere exceed four inches in 100 yards, or a little less than six feet per mile.

The positions most suitable for the sluices are in general those portions of the bars over which the strongest high water currents are likely to pass, and where the distance from the deep water above the bar to that below is shortest. Thus situated, they will be less liable to obstructions by the accumulation of sand, &c., within them in high water, and, of course, will be the more likely to remain open and unobstructed during the subsidence of the water.

2d. *Dams.*—The term dam is regarded as applicable, not only to any structure thrown across a river for the purpose of stopping or checking the water, but to any similar structure thrown entirely across one arm or portion of the river for the purpose of diverting the water into another, as, for example, on one side of an island, for the purpose of turning the water to the other side.

Structures of this nature admit of various modifications, some of which are worthy of particular notice, by reason of their fitness for the service before us. Of these, and also of the localities to which they are severally adapted, we shall treat very briefly, as follows:

First variety. The first variety to be noticed is a dam formed of stone, in masses of all shapes and sizes promiscuously thrown together and forming a rude wall, whose summit is 3 to 10 or 12 feet wide, whose sides slope downward at an angle of at least 45 degrees, and whose base will, of course, have a width equal to twice its height added to the width of its summit. Its extremities may abut at any convenient points on opposite sides of the stream or *slough*, and its direction between its abutments should be straight or slightly arching upwards against the stream. Such a dam is applicable only in situations where the river has a rocky or otherwise firm and unyielding bed as a foundation, and never should rise more than one, or at most, two feet above the surface of extreme low water.

Second variety. This variety of dams consists of stones like those of the first, intermixed with a profusion of bushes and brush, and may be distinguished by the name of the *brush and stone dam.* Its dimensions, position, and the nature of the foundation upon which it rests should be similar in all respects to those of the stone dam. In comparison with the latter, the *brush and stone dam* is to be regarded as preferable, in some situations, by reason of its being more impervious to water and less liable to be demolished by floating ice and other drift.

In order to prevent the summits of these two varieties from being swept away by drifting substances, it will be advisable, in many instances, to form these parts by the use of parallel timbers firmly bonded together by ties, wharf-locked and trenailed to the timbers; the distance between the latter being equal to the width of the summit, and the intermediate spaces being filled with stone, carefully laid and well compacted.

Third variety. In this class we shall include the *crib dam,* which consists of a series of horizontal frames, each frame being composed of parallel timbers strongly bonded together by transverse ties, the latter being wharf-locked into the former and confined by trenails: thus forming a horizontal frame work, the side timbers of which may be prolonged at pleasure by splicing similar timbers together, and thus the frame work continued to any desirable extent. Upon this frame work as a basement, another may be laid similar in all respects to the first, except in its width, which should be narrower by twice the diameter of the side timbers than the other. To this last, a third frame work may be applied, with similar relations to the second that the second had to the first, and so on till the entire frame work of the structure is completed. In arranging the ties or transverse bonds, care should be taken to place them one directly above another, thus dividing the whole into compartments, which, as the work of construction progresses from the bottom towards the top, are to be filled with stone, or bushes and stone combined.

The dimensions of the crib dam, when completed, will be similar, in all respects, to those of the stone dam above described as the 1st variety. Both of these dams are, no doubt, applicable, with nearly or quite equal advantage in the same situations, except, probably, that a crib dam will answer a better purpose on a foundation somewhat defective and unstable than a stone dam.

In 1832 I took occasion to project and recommend similar dams, as a means of improving the navigation of the Holston and Tennessee rivers above the Suck. They were, accordingly, introduced, and appear to have answered all the purposes for which they were intended.

4th variety.—A structure which may be designated as the *timber dam*, will be classed in this variety. It consists of trees drawn or floated into the line of the dam with their butt-ends down stream, and forming the cascade or pitch of the dam. When brought into line, the larger limbs of the trees are to be partially amputated and lopped, and their tops weighed down and anchored, by stones thrown upon them. Saplings and small trees, of about a foot in diameter, are best adapted to structures of this sort. In the progress of construction, the upper side of the dam, or that portion composed of the tree tops, &c., may have a tendency to rise above or faster than the lower side, which is composed of the trunk of the trees. This tendency must be obviated, either by the introduction of tree trunks, divested of their tops, into the lower side of the dam, or by arranging each successive layer of trees farther up stream than that upon which it rests, and thus forming a sloped pitch to the dam. Thus constructed, and the butts of the trees regularly cut off to the work-line of the dam, the combing and pitch of the latter may be formed with as much regularity as those of a regularly built stone dam.

The timber dam is undoubtedly preferable to either of the dams previously noticed, in all situations where the bottoms and sides of the stream are composed of sand, clay, mud, or other yielding materials, or where no substantial foundation can be found for the structure.

5th variety.—The *bush dam* is similar in all respects to the timber dam, except that it is constructed of bushes and brush instead of trees. The localities at which it is applicable are also similar to those appropriate for the dam last mentioned. This mode of construction is entitled to a preference to either of the others previously considered in its application to wing dams, of which more particular notice will soon be taken.

It should be borne in mind that the purpose for which dams have been considered requisite, as above, are merely the interception or stoppage of low-water currents, passing in separate, distinct, or independent channels. The means of deflecting similar currents, of reducing and limiting the areas over which they spread, of concentrating their water into narrow channels or sluices, and of confining it within due limits when concentrated, as also the circumstances under which these means are applicable, now claim attention, and will be considered under the following heads, viz:

3. *Wing dams, jetties, &c.*

The modes of construction explained under the preceding head are equally applicable to the works now under consideration, the timber dam alone excepted. To these modes we shall add a few others, which are deemed more appropriate under certain circumstances, and which are as follows, viz:

6th variety.—In this class we shall include the *pile dam*, constructed in the manner already explained in a previous notice of wing dams already constructed in the Ohio river, or by means of piles driven into the bed of the river, for the purpose of confining bushes, brush, and other materials that may be employed to intercept the passage of the water across the line of the dam. This mode of construction is applicable only in situations where the bed of the river is composed of compact earth, sand and gravel more or less consolidated, and where the current of water is slow and weak. The direction of a wing dam thus constructed should be such as to form an angle of fifteen, twenty, or, at most, thirty degrees with the thread of the stream, otherwise the structure will be liable to be undermined and swept away by the current. The height of such a dam should never exceed twelve or fifteen inches above the surface of extreme low water.

7th variety.—The dam constituting this variety, we shall denominate the *snag dam*, which is to be composed of trees and saplings cut or uprooted from the banks of the river above, floated downward to the site of the contemplated dam and deposited, two or more abreast, with their tops down stream and their butts upwards, the latter being sunk and anchored at the bottom of the river by means of stones of suitable size, bolted or otherwise attached and confined to the trunks of the trees near their butts.

The structure should be commenced at its lower extremity and carried upward along the line of the contemplated dam by successive depositions of anchored trees; each deposite overlapping that previously made, till the work is completed. Thus constructed, the dam will present a sort of hedge row of snags, their butts resting on the bottom of the river, and their limbs, &c., rising to, or above its surface. Its obliquity, with respect to the current, should not exceed that of the pile dam. The localities to which it is applicable, are shoals of greater or less extent, occasioned by deep beds of loose sand, &c., where no foundations can be found sufficiently firm and unyielding for other structures.

In regard to the utility and efficiency of the snag dam, there seems to be no reasonable doubt; for it is manifest that any stationery obstacle fixed in a current of water, whether the obstacle be light or heavy, of wood or of stone, will obstruct the passage of the water to an extent proportionate to its size. Accordingly, the dam being composed of a series of such stationery obstacles, in close array, it will impart an amount of obstruction corresponding to that of the aggregate magnitude or bulk of the obstacles combined in the dam. It is believed that wing dams constructed in this way, would prove more efficient in many situations, and at the same time far less expensive than the structures heretofore employed for similar purposes. Indeed, I know of no method comparable to it as a means of diverting a body of shoal water from its passage across a soft quicksand bar.

8th variety.—We may still add another mode of construction which will be likely to prove useful in some situations. It may be composed of a series of arks or flat boats, large wooden coffers specially prepared for the purpose, cribs composed of round timbers suitably locked together in a manner to enclose spacious cavities, and various other artificial structures of greater or less capacities, all replenished with stone, gravel, or sand, and sunk along the line of the required dam. To this variety, for the sake of distinguishing it from others, we shall give the name of the *ark dam.* Structures of this sort may, no doubt, in many places be substituted to advantage, instead of those designated under the two preceding varieties, and will be likely to subserve a valuable purpose in the formation of short jetties, for the purpose of giving to channels their proper direction and of maintaining the same.

9th variety.—Trunks of trees, as large and long as practicable, spliced or connected in such a manner as to form a continuous chain or boom of the requisite extent, weighed down and confined to the bed of the river at suitable intervals by stones or otherwise, may be applied to advantage on extensive shoal bars, as a means of concentrating the water into a single channel. The series of tree trunks may be doubled, tripled, quadrupled, &c., according to the depth and force of the current to be intercepted by them. To this structure we shall apply the name of the *boom dam.* It may be advantageously modified, strengthened, and rendered more efficient by adding stones, or stones and bushes to its sides, and thus fortified, it may with propriety be substituted in many localities, instead of varieties Nos. 1, 2, and 3, especially in the construction of wing dams.

4th. River walls.

Works of this sort will be required in many places for the purpose of prolonging an artificial sluice leading across an extensive flat bar, and occasionally for remedying short turns in the natural channel, preventing the current from dashing against a rocky bound shore, &c. In situations where the bar is of rock, indurated gravel, &c., the structures denominated the stone dam, the bush and stone dam, or the crib dam, would, no doubt, be appropriate, but where the bed of the river is composed of soft yielding sand or mud, the snag dam, or the boom dam would, no doubt, prove a economical, and at the same time an equally efficient structure.

10th variety.—A wall regularly laid with undressed stone, with or without a batter, and surmounted by a heavy coping of timber, firmly attached and bound to the wall, will be appropriate in many situations where the bed of the river is composed of rock, and especially where a rapid current through the sluice is unavoidable. This variety may be distinguished by the name of the *rubble wall.*

In the formation of channels through beds of rock, especially where deflections are unavoidable, it will be advisable to apply to the concave side of the sluice, strong timbers suitably spliced and firmly attached to the rocks at the side of the channel, by means of props, braces, and clamps, either of cast or of wrought iron or of both, strongly bolted to the rocks and to the timbers, for the purpose of protecting passing boats and other craft from injurious impacts against the stones. To these appendages the name of *fenders* is applicable. Of the propriety of employing fixtures of this sort, both in curved and direct channels, and especially where the sluice is narrow and the current very rapid, there can be no doubt. In the formation of sluices at the Des Moines and Rock island rapids, Muscle shoals, &c., frequent occasions for the employment of fenders will, undoubtedly, be presented.

General remarks.

The application and use of the several structures of which we have been treating should be preceded by careful surveys, soundings, &c., showing all the features of the localities at which improvements by means of their introduction are to be effected.

In the construction of wing dams or jetties protruding from the shore, care should be taken to elevate their crests to a height not exceeding 12 or at most 15 inches above the surface of extreme low water at their river or lower extremities, while they may be allowed to rise gradually and uniformly to the height of three or four feet above the same level, in their passage thence to their shore extremities. By this means the currents in ordinary low water will have a tendency to waft descending boats, rafts, &c., around the points of the dams, without exposing them so much to the hazard of being wrecked.

In some instances it may be advisable to continue the jetty or river wall downward, and return it again to the shore. In such a case it will be proper to reverse the declivity of the crest, by raising its lower extremity considerably above the level of its upper extremity. The object of this arrangement is to prevent the current from setting too strongly across the upper portions of the wall, and thereby forcing boats, &c., against the wall in ordinary low stages.

With respect to the altitude of dams, walls, &c., generally, it should never exceed the depth of draught for which provision is to be made. Those located upon sand bars or other unstable foundations, especially, should never rise more than 12 or 15 inches above extreme low water surface; jetties protruding from the shore, alone being excepted.

Particular attention should be paid to the direction proper to be given to a wing dam in its passage over a sandy and unstable foundation, for it is pretty certain that the channel occasioned by it will sooner or later pass in the vicinity of the dam, immediately above and parallel to it, through the greater part of its length.

A few historical items in reference to the removal of sawyers, snags, logs, &c.

In 1823, the United States board of internal improvements publicly offered a premium of a thousand dollars for the best plan, project, or method, of removing snags, &c. from the channels of the Western rivers. The offer was answered by numerous projectors, who put forth and forwarded to the board a great variety of mechanical devices, plans of operations, &c. The board, after a careful examination of the various plans and methods of operations thus elicited, awarded the premium to a citizen of Kentucky, by the name of Bruce, having decided that the machinery and the method devised by him was entitled to a preference over all others submitted in answer to their call.

The method of Mr. Bruce contemplated the use of what is called the twin boat, consisting of two parallel hulls, eight or nine feet asunder, and strongly bounded together by transverse beams or timbers, stretching from out to out of both hulls. A powerful windlass, or wheel, and axle, elevated several feet above the decks of the boat, and resting transversely of the boat, and directly over the vacant space intervening between the hulls, on substantial frames or supports, together with chains, warps, ropes, levers, &c., constituted the machinery employed for raising the snags, &c. from the bed of the river. This machinery was to be operated upon by manual power; and, by this means, the snags, logs, &c. were to be lifted to the surface of the water, or upon the decks or ways of the boat, where they were to be cut into pieces, and then conveyed to shore or sunk in deep water. The craft, called machine boats, now generally employed in connexion with the steam snag boats in improving the Western rivers, are analagous, in al respects, to the boat devised by Mr. Bruce.

In 1824, Mr. Bruce served as an agent of the United States, and was employed, under the direction and supervision of the late Major Babcock, then of the corps of engineers, in the application and use of the method of removing snags, &c., devised by himself, on the Ohio river, and continued in this service till 1826.

Early in the spring of 1826, Major Babcock was relieved from duty on the Western rivers, and I was required to take charge of the duties previously committed to that officer. I continued thus assigned for about three months only, when my services were required in another direction, and I was directed to nominate as my successor some individual of the West distinguished for his practical knowledge of Western river navigation, for his ability to overcome the difficulties attending it, and for his competency to manage all concerns relating to the same. I accordingly nominated Captain Henry M. Shreve, who was at once appointed to succeed me, and continued in the superintendence of the Western river improvements till some time in 1839, when all operations connected with these improvements were temporarily intermitted.

Soon after the introduction of Bruce's method, experience in its application and use began to show the propriety of alterations, amendments, and additions, which were sucessfully made, till at length the simple twin hand boat, worked merely by manual power, was metamorphosed into the gigantic steam snag boat, which operates almost entirely by the aid of steam power.

Prior to 1828, the steam snag boat, together with all its details of construction and arrangement, was brought, by the united counsel and advice of all concerned in its management, and experimentally acquainted with the nature of the service for which it was intended, to such a state of maturity, efficiency, and perfection, that it embraced most, if not all, of the parts and adjustments which at this time are deemed most useful and essential to its efficient and successful operation.

The nature and objects of the several alterations and improvements alluded to, in the invention and discovery of which Captain Shreve no doubt acted a more conspicuous and efficient part than any other individual, having been fully explained to the Engineer department at Washington, and the propriety of introducing the new modifications contemplated thereby ably and forcibly set forth in a memorial signed by numerous steamboat masters and others, and addressed to that department, the construction of one or more snag boats on the newly-devised plan was at once authorized, and funds for that purpose provided and placed at the disposal of Captain Shreve.

In the following year, 1828, the new steam snag boats were ready for service, commenced operations, and continued to operate with signal success through the period of their existence, viz. for six years, or more. On the decay and failure of these, others were built to take their places; and the business of raising and removing snags by the use of steam snag boats was prosecuted with great energy and success on the Ohio, Mississippi, Missouri, Arkansas, and Red rivers, in succession, from 1828 to 1838. After which, the work was intermitted, except on the Red river, till the autumn of 1842, for want of appropriations.

Prior to 1838, the number of steam snag boats that had been constructed was six—viz: the Heliopolis and Archimedes, which have been worn out and decayed in the service: two other boats of the same names, which have recently been repaired at heavy expense, and are still in the service; and the Eradicator and Henry M. Shreve, both of which have been sold; the former to the contractor for the removal of the Red river raft, &c., and the latter stripped of its steam engine, windlass, &c., to the highest bidder, a citizen of the United States. These boats involved in their construction the same general principles; and, with the exception of the Eradicator, which was furnished with a single hull only, embraced very nearly the same parts and appendages. All of them were planned, built, arranged, and fitted out at the public expense, by persons employed and paid by the United States. Their cost, on an average, exclusive of rigging, tools, and other equipments, was about $25,000 for each boat, or $150,000 for the whole number.

In 1838, after one or more of the steam snag-boats had been devised, constructed, and publicly used for many years, Captain Shreve applied for and obtained letters patent of the United States, vesting in him the exclusive right of making, using, and vending the improvements made as above at the expense of the United States, and publicly used by the same for a period of at least ten years; during the whole of which Captain Shreve was in the employ of and paid for his services by the United States; which letters patent could only be granted, on the oath or affirmation of the applicant, that the improvement or invention covered thereby was, to the best of his knowledge and belief, useful and *new*, or never before employed for the purposes set forth therein.

During the period above contemplated, and in addition to the snag-boats above mentioned, no less than eight or nine small steamboats belonging to the United States were employed, from time to time, on various services connected with the improvement of the western rivers. Some of these have decayed in the service, and the rest have been sold at a great sacrifice, so that none of them now remain in the possession or at the disposal of the United States.

In 1841, an appropriation was made by Congress (the amount not recollected) for the removal of the raft of Red river, previously cut through under the direction of Captain Shreve, but again formed in a manner effectually to interrupt the passage of steamboats. The work of this contemplated removal was provided for by contract with General Thomas T. Williamson, and it is still in progress. The contract provided for the purchase of the snag boat Eradicator (originally designed for the Red river service, and subsequently repaired and refitted for the same,) on the part of the contractor, at a stipulated price, viz: $8,000.

In 1842, $100,000 was appropriated by Congress "for building and repairing the necessary boats, and for carrying on the improvements of the Missouri, Mississippi, Ohio, and Arkansas rivers."

Captain John W. Russell was appointed as agent for the United States, and charged with the superintendence of the operations above contemplated. Under his direction, the snag boat Heliopolis and Archimedes, were repaired and refitted at St. Louis, in the months of September, October, and November of that year, and commenced operations in December following upon the snags, &c., on the lower Mississippi. These operations were continued till April 17th of the present year, when the boats were compelled to lay by on account of the prevailing high water. During these operations, the number of obstructions removed from the bed of the Mississippi was 1,722, and of impending trees, &c., cut from its banks, 5,960.

Additional appropriations were made by Congress during their last session, viz: for the half year commencing on the 1st of January, and ending on the 30th of June, 1843, $50,000; and for the new fiscal year commencing on the 1st of July, 1843, and ending on the 30th of June, 1844, $100,000; making an aggregate of $250,000 appropriated for the entire period, beginning August 23, 1842, and ending June 30th, 1844. Of this amount, and in accordance with instructions from the War Department, $50,000 were set apart for improvements on the Ohio river above the falls at Louisville, the direction and execution of which improvements have been confided to Captain Sanders.

In the mean time, additional snag boats were required for service on the Western rivers; and the building of two large boats of this description was commenced near Louisville, in the fall of 1842, and completed early in July, 1843. Moreover, repairs, on a large and expensive scale, were required on the old snag boats Heliopolis and Archimedes, which were commenced early in May, and prosecuted with diligence till about the 1st of August, when the boats last mentioned were again thoroughly repaired and refitted for the service—the water of the Mississippi at that date having subsided sufficiently to admit of the resumption of operations again in that river with these boats.

The expenses incurred in removing obstructions, building new snag boats, and repairing old ones, as above, under the appropriations of 1842 and 1843, and since the third quarter of 1842, in so far as they can be gleaned from the returns of Captain Russell, who has been charged with the immediate superintendence of these several operations, and from other accessible sources, will be exhibited under the following head.

Expenditures on account of improvements in progress on the Mississippi, Missouri, and Arkansas, and on the Ohio, below the falls at Louisville, from the 1st of October, 1842, to the 30th of June, 1843.

In Captain Russell's return for the third quarter of 1842, there is an entry to the credit of the United States, of funds received from Captain Lee—probably the unexpended balance of an old appropriation amounting to - - - - - - - - - - $5,744 82

This sum should be added to the aggregate of appropriations, as before stated, viz: - - - - -	$250,000 00
Total amount applicable to the improvement of the Mississippi, Missouri, Arkansas, and Ohio rivers, since the resumption of this service, in 1842 - - - -	255,744 82

Of this amount, the following sums have been already expended, or otherwise disposed of, viz:

Amount of disbursements for the third quarter of 1842, as per returns of Captain Russell - - - - -	$3,388 78
Amount, &c., for the fourth quarter of 1842 - - -	13,040 09
Amount, &c., for the first quarter of 1843 - - - -	2,475 15
The disbursements for the second quarter of 1843, (vouchers examined and approved by Lieutenant Colonel Long,) were as follows, viz:	
Amount on account of removing snags in Mississippi river -	15,374 95
Amount on account of repairs of old snag-boats at Paducah	3,955 29
Amount on account of outfit of old snag boats at Paducah -	2,484 18
Amount on account of construction of two new snag boats -	38,476 33
Amount on account of outfits of two new snag boats -	8,134 45
Amount on account of office rent, hire of assistant, clerk, purchase of stationery, &c., for Lieutenant Colonel Long, at Cincinnati - - - - - - - -	612 93
Amounting to - - - - - -	87,942 15
To this amount should be added the sum set apart for the Ohio river above the falls, viz: - - - - -	65,000 00
And we have for the amount already disposed of - -	152,942 15

The difference between this last amount and the total amount available for the service, as above stated, will be the amount applicable to the improvement of the rivers above mentioned, (with the exception of that portion of the Ohio situated above the falls,) within the new fiscal year commencing on the 1st of July, 1843, and ending 30th of June, 1844, thus:

Total amount applicable to improvement - - -	$255,744 82
Amount expended or disposed of - - - - -	152,942 15
Difference, or balance available for the new fiscal year -	102,802 67

The objects upon which this balance is expected to be expended within the fiscal year are briefly as follows, viz:

Construction and outfit of a new steam machine boat, already contracted for - - - - - -	$8,300 00
Cost of working the same, inclusive of pay, subsistence, &c., of officers and men, fuel for engine, &c., 9 months, at $1,100 per month - - - - - -	9,900 00
Cost of working, &c., snag boats, inclusive of pay, subsistence, fuel, &c., as above, 9 months, at $2,160 per month, for each boat - - - - - - -	77,760 00

Repairs, safe keeping, re-outfit, &c., of the above boats, during three months while in port, on account of high water, at $1,500 per month for all - - - - -	$4,500 00
Construction and outfit of a new steam machine boat, not yet contracted for - - - - - - -	8,300 00
Cost of working the same, inclusive of pay, subsistence, fuel, &c., as above, 3 months, at $1,100 - - -	3,300 00
Office rent, at Louisville, for Captain Russell, clerk hire, fuel, stationery, &c., 12 months, at $65 - - -	780 00
Office rent, at Cincinnati, for Lieutenant Colonel Long, clerk hire, stationery, fuel, &c., 12 months, at $70 per month -	840 00
Pay of a civil assistant, 12 months, at $100 - - -	1,200 00
Estimated cost of surveys, &c., at the falls at Louisville -	692 00
Contingencies, including sundry surveys, examinations, travelling expenses, &c., say - - - - - -	2,230 67
	117,802 67

Hence the amount to be expended during the new fiscal year, or from the 1st of July, 1843, to the 30th of June, 1844, agreeably to the foregoing exhibit, will be equal to the amount available for the same period.

The foregoing exhibit embraces all the items of expenditure incident to the operations already commenced, and now in progress under existing appropriations. It now remains that, in conformity to instructions, I present estimates for the fiscal year commencing on the 1st of July, 1844, and ending on the 30th June, 1845, setting forth the probable amount required for the improvement of the several rivers committed to my care during that year. In these estimates it is expected that a discrimination will be made in such a manner as to show the amount required separately for each of the rivers, viz: for the Mississippi, Missouri, Arkansas, and Ohio, below the falls. Such a discrimination is deemed not only inexpedient, by reason of the difficulty and trouble of keeping separate accounts, and making suitable divisions of provisions, tools, equipments, repairs, renewals, &c., required for the rivers respectively, but impracticable on account of the propriety and necessity of transferring the boats, &c., from one river to another, in order to keep them advantageously employed during all stages of the rivers, and all seasons of the year, so far as this may be done. Moreover, in view of our present dearth of information, with respect to the condition of all these rivers, and to the nature of the various operations required for their improvement, any attempt at a judicious discrimination must prove inadequate and unsatisfactory, if not altogether fallacious. I shall accordingly endeavor to present a general estimate, covering the various items of expenditure believed to be necessary to the continued employment of the forces, means, and appliances, now in service, together with such preparations and helps in the furtherance of the service, as are deemed proper for the period under consideration, without attempting to fix the several amounts required for each river.

Estimate of funds required for the improvement of the Mississippi, Missouri, Arkansas, and Ohio, below the falls, during the year beginning on the 1*st July*, 1844, *and ending on the* 30*th June*, 1845.

Employment of four snag boats, nine months, at $2,160 per month, for each boat	$77,760
Repairs, safe keeping, re-outfit, &c., of four snag boats, for three months, at $2,000 per month, for the whole	6,000
Employment of two steam machine boats, nine months, at $1,100 per month, for each boat	19,800
Repairs, safe keeping, re-outfit, &c., of two machine boats, three months, at $1,000 per month, for both	3,000
Construction of two small steamboats, or transports of light draught, to serve as tow boats, transports, tenders, &c., in the service, at $8,000 for each	16,000
Employment of two steam transports, nine months, at $800 per month, for each	14,400
Repairs, safe keeping, re-outfit, &c., of two transports, three months, at $500 per month, for both	1,500
Office rent, clerk hire, stationery, &c., for superintendent at Louisville, twelve months, at $65 per month	780
Office rent for commanding officer at Cincinnati, twelve months, at $70 per month	840
Pay of two civil assistants, twelve months, at $100 per month, each	2,400
Pay of two civil assistants, twelve months, at $75 per month, each	1,800
Survey of the shoals, &c., of the Ohio, below the falls	3,000
Survey of the shoals, &c., of the Upper Mississippi	3,000
Survey of the shoals, &c., of the lower Mississippi	3,000
Survey of the shoals, &c., of the Missouri	1,000
Survey of the shoals, &c., of the Arkansas	3,000
Survey of the shoals, &c., of the Tennessee, below Waterloo	1,000
Survey of the Des Maines rapids, Upper Mississippi	2,000
Survey of the Rock island rapids, Upper Mississippi	1,500
Survey of Colbert's shoals, Tennessee river	2,000
Survey of the Muscle shoals, Tennessee river	3,500
Survey of the Suck, &c., Tennessee river	2,500
Constructiug dams, improving channels, and various other operations, not now definable, say	53,220
Amount required	223,000

The last item of the foregoing estimate is intended to cover but very partially the amount that will be required for the accomplishment of the numerous works and operations to which it alludes. It is inserted merely for the purpose of having at command the means of improving, in part, some of the most difficult and dangerous low water passes, that imperatively demand prompt attention.

The amount called for as above is two hundred and twenty-three thousand dollars, which, it is believed, will answer the exigencies of the service on the several rivers contemplated in the estimate, during the second fiscal year beginning July 1, 1844, and ending June 30, 1845.

In conclusion, I take leave to request that the following officers and assistants be assigned to duty under my command, to aid in carrying on the several operations contemplated in the foregoing essay, viz :

One captain of the corps of topographical engineers to be stationed at St. Louis, whose duty it should be to aid me in the general direction, supervision, and inspection, of the various operations committed to my charge.

Two lieutenants of the corps of topographical engineers, one of whom should be charged with the surveys, soundings, &c., required to be made in the Upper Mississippi; and the other with the surveys required in the Lower Mississippi and Arkansas rivers.

Two principal assistant civil engineers, (A. Campbell, Esq. being one of them ;) one to take charge of and execute the surveys, soundings, &c., required on the Ohio, below the falls at Louisville ; and the other, to do the same in reference to the surveys, &c., required in the Tennessee river.

Two sub-assistant civil engineers, each of whom should serve as an assistant to one or other of the principals just before mentioned.

I also take leave to request that the following instruments be procured and forwarded for use in this department of the topographical service in addition to those now on hand, viz :

Three levelling instruments, with stands, targets, and rods, complete.

Four transit or theodolite compasses, with stands complete. (The theodolite compass now on hand is inconvenient in use, by reason of its not being adapted to the taking of back sights without reversing the instrument.)

Three surveyors' chains, (50 feet,) with chain pins.

Four surveyors' chains, (100 feet,) with chain pins.

Four measuring tapes, (50 feet.)

I take leave to subjoin, by way of postscript, the following items of intelligence derived from the monthly reports of Captain Tyson, of the snag boat Samson, and Captain Dillingham, of the snag boat Sevier, for the month of July last, recently forwarded by Captain Russell to this office.

Agreeably to Captain Tyson's report, the Samson was employed in removing snags, &c., in the Ohio, below the mouth of Green river, from the 10th to the 17th of July, during which time the number of obstructions removed consisted of thirty snags, and four trees cut from the shores; and in the Mississippi, between the mouths of the Ohio and that of the Missouri, from the 18th to the 31st of July, in which time the number of obstructions removed embraced one hundred and twenty-three snags, and giving for the whole number removed from the Ohio and Mississippi, one hundred and fifty-three snags and four trees.

Captain Tyson also reports two unfortunate occurrences, that resulted in the loss of the lives of two of his men; one of whom accidentally walked overboard in a dark night, and the other was dragged from the boat into the river, while engaged in paying out the large windlass chain. The utmost exertions were used to save them from drowning, but all proved unsuccessful, and both were irrecoverably lost.

Captain Tyson's report was dated on the 7th of August, at which time the snag boat Samson had arrived at St. Charles, on the Missouri, after having removed many obstructions from the lower part of that river.

According to the report of Captain Dillingham, the snag boat Sevier, under his command, was employed on the Ohio, below the mouth of Green river, from the 8th to the 17th of July, and in that time removed thirty-eight obstructions. After which, this boat was taken to the Arkansas, by the White river cut-off, and operated in that neighborhood from the 20th to the 31st of the same month, having in the mean time removed one hundred and fourteen snags, and cut from the shores one hundred and fourteen trees, giving for the number of obstructions removed by the Sevier, in the Ohio, mouth of White river, the Cut-off, and Arkansas river, in the month of July, one hundred and fifty-two snags and fourteen trees.

The new snag boats, Samson and Sevier, are represeented as being well adapted to the service for which they were intended. Much inconvenience, and occasional hindrances, have been experienced on board of both boats, by reason of the prevailing epidemic, called the influenza. The crews of both are said to be composed of able-bodied and efficient men.

As yet no report has been received in explanation of the services performed by the old snag boats Heliopolis and Archimedes, during the month of July. These boats commenced operations at a very late date in that month, and are now employed in removing obstructions from the Mississippi, between the mouths of the Ohio and Missouri.

With respect to the operations performed in the month of August, no returns could be made in season for insertion in this report.

I have the honor to be, sir, very respectfully, your most obedient servant,

S. H. LONG,

Brevet Lt. Col. Topographical Engineers.

No. 3.

Office Ohio River Improvement,

Pittsburg, Pennsylvania, September 1, 1843.

Sir: In reporting on the progress and present state of the operations for improving the navigation of the Ohio river above the falls, I shall briefly refer to what has heretofore been done towards effecting the same object.

Previous to the war of 1812, the commerce of the Ohio valley was not so extensive, nor the means for its transportation so certain and rapid, as to call for any artificial extension of the cheap and easy transit afforded in times of freshets and floods; but the introduction of steamboats, and the rapid increase of its population and its productions, and the opening of so many lines of communication with the Atlantic seaboard, made any interruptions to the navigation, arising from insufficiency of water, caused by the long droughts of the summer and autumn, to be severely felt by all the business and travelling community. In 1817, the State of Pennsylvania appropriated $2,000 for "viewing the Ohio," and in the following year the other States bordering on its waters, Virginia, Kentucky, Ohio, and Indiana, appointed commissioners to examine and devise some joint action for improving its navigation. I have never met with their reports, and am not aware that they resulted in any action. However, Pennsylvania did subsequently appropriate about $15,000 for improving the upper part of he river; the application of which, I believe, was not confined to the limits of the State, but was extended on to Wheeling. Steamboat architecture not having reached its present perfection, it was not then imagined that steamers could be built light enough for very low water navigation, but that all the transportation would be confined to keel boats when the river was below a three-foot stage. Consequently, all such channels as were dug or scraped out by the Pennsylvania commissioners, were made very narrow, and often with such short turns as to be exceedingly inconvenient for steamboat navigation. I am under the impression that some of the earliest appropriations made by Congress for the western rivers were partially expended in the removal of snags and rocks from the upper Ohio river. However, I know of nothing being done towards deepening the water over the bars, besides that which was undertaken by Pennsylvania.

In 1835, Congress made a specific appropriation of $50,000 for improving the navigation of the Ohio river above the falls. At that time there were neither surveys, projects, nor estimates exhibiting the nature of the obstructions, the character of the improvements, or their probable cost. The disposition of this appropriation was confided to Lieutenant G. Dutton, who, on the first subsequent low water, made a reconnoissance of the river; the result of which was reported to the Department, with a table exhibiting the number of shoals, depth of water, and nature of bottom, with drawings of some of those points which were considered to present the greatest obstructions to the navigation. The general plan of improvements proposed by him, was to concentrate the water into one volume, when divided into several channels, and to remove all snags, logs, and detached rocks from the bed of the river. Lieutenant Dutton built four hand-machine boats for removing rocks and snags; they were equipped and prepared for work in the summer of 1836. I joined him at that time as an assistant, but, as his other duties called him to the Cumberland road, I was actually in charge from September, 1836; and in 1837, Lieutenant Dutton, at his own request, was regularly relieved from all further connexion with the work. I commenced the construction of the dams at Brown's island in 1836. In 1838, I commenced those at White's ripple and Captina island. These three cases are the only instances in which any attempt was made to deepen the channel by concentrating the water into one volume. They were all successful, and established the correctness of the principle. The other operations were confined to the removal of snags and rocks, and the prosecution of a minute survey of the river, which was continued down to Letart's falls, a distanceof two hundred and thirty-four miles below Pittsburg. In 1839, all operations ceased, the appropriations (which up to that time altogether amounted to $180,000) having been expended. In 1840, most of the public property, and all the perishable part of it, was sold, and the debts paid off. I was shortly after ordered on other duty. In April last, I again assumed the charge of this work, under the direction of your bureau, being entrusted with full discretion as to its management, and having since met with every facility and support on your part that any subordinate could desire.

I beg to refer you, for a more complete account of the work hitherto done, to the reports of Captain Dutton and myself, which are to be found in the Executive documents from 1835 to 1839; and to Captain Hughes's highly interesting report of his reconnoissance of the Ohio river, made in October, 1843. You will there see the development of those views which have, by gradual steps, led to the formation of what may, with some propriety, be termed a system for the improvement of the low water navigation of this river. There could be no diversity of opinion as to the propriety of removing snags, rocks, and such like obstructions, though there may be some choice in the means employed. I am satisfied with the machinery heretofore in use, and, as there is much of it remaining on hand, it cannot be advisable to change it. Plans for deepening the channel, and regulating its directions, are fruitful sources for clashing views.

The Ohio, which is formed by the junction of the Allegany and Monongahela rivers, has a course of about 600 miles to its falls. Its tributaries from the north, or on its right, (Beaver, Muskingum, Scioto, and Miami rivers,) having their sources in the low flat lands between the river and lakes, are not subject to freshets or floods in the summer and autumn, and consequently have little or no influence on the low-water navigation of the Ohio. They do not more than supply the loss of its water, arising from evaporation and absorption. I cannot discover that it was ever different; and we have some knowledge of the river since 1760, fully eighty years. The forests of Ohio remained in their native state more than half of that period; so there is no cause of alarm from the portentous prophecies of those philosophers who imagine our rivers are to dry up with the clearing of the forests. Its own proper sources, and its tributaries from the south, (Little and Big Kenawha and Kentucky rivers,) all coming from the Allegany mountains, like other mountain streams, may bring down a flood any month in the year, causing most unexpected rises in July, August, and September. I recollect that, late in August, 1837, being on the river and lying by for the night, with a clear sky and no indications of a swell in its waters, to have been startled in the morning by finding an angry and muddy torrent, with a surface 12 feet higher than that of the clear and gentle stream on which our boat floated the evening previous. In July last, I started down the river in a row boat, the water clear and but little over two feet in the channel, thinking I would have a most favorable opportunity for examining the river; but in less than twelve hours it rose seven feet. For the last five weeks, the river has been at about a two-foot stage for 270 miles below Pittsburg; but, in that interval, there have been two distinct rises out of the Big Kenawha, maintaining a very favorable stage of navigation on the Ohio, below their junction, up to the present time. Whether cleared of trees or covered with the densest forests, I should imagine that the slopes of the mountains are steep enough to run the water off, before its quantity is materially affected by solar evaporation.

Twelve inches over a very few of the shoals is as low as the water of the Ohio ever has been known. This was about the state of it in 1796, 1819, and 1838. Once in twenty years is therefore as often as so extended and continuous a drought is likely to occur, which could alone bring about such a state. Some years the water in the channel is at no time less than three feet deep, which is, however, very unusual. The average of different seasons would not justify us in calculating on escaping a low-water navigation, for a period of five or six weeks' duration, some time either in the last of summer or the first weeks of autumn, which might not afford more than from sixteen to twenty inches over some of the shoals. The improvement called for is to deepen the channel when at this stage. The additional depth which I feel confident of obtaining would give at the same stage of the river from twenty-four to thirty inches over all its shoals.

There are now about twenty boats plying on the river, which can run light in twenty inches water. The best models of light-water boats draw from fourteen to eighteen inches water; being flat bottomed, and having a good bearing, they can carry fifty tons down stream, and about thirty up. A boat drawing nearly all the water in the channel requires several more in ascending than in descending the river. When the improvements I hope to see effected are completed, two feet will be the minimum depth to which the river will ever fall. This additional depth is to be brought about by concentrating all the water of the river into one volume, which will give the current the additional impetus to cut away from the bed of the river, or top of the shoal, until that depth is attained, and where the bottom will not yield to attrition, to effect the same object by direct excavation. To give a permanent feature to the improvements, it is of the first importance that the channel should keep itself clear, which will always be the case, if the direction of the current of the river is the same at low as at high water. If, from any irregularity or inequality in the hardness of the bottom, the proper direction cannot be obtained by the simple action of the increased current, scraping and excavation must be resorted to. Stopping up useless passages behind islands and bars will improve all stages of navigation; but in an island chute, besides the main channel, there may be several "*slues,*" or minor passages of water, which ought also to be closed. If these are stopped up, it may very well be done with the gravel scraped from the sides of the main channel, in giving to it its proper width, which should rarely be less than 200 feet. The dams built for closing these minor passages should not be above the surface of the lowest water. If it becomes necessary to concentrate the water, to improve the medium stages of navigation, the width of the channel should be enlarged beyond that to which it is limited at the lowest stage, which can be done by setting the new dams further in towards the shore than the first one, instead of building it vertically upon it.

For assisting the action of the current of the concentrated mass of water in deepening the bars, for widening narrow channels, and for giving a proper direction to those which are too crooked, or not parallel with the direction of the main current at high water; a machine for cutting away or scraping from the surface of the gravel bars was a great desideratum. Scraping with horses would be difficult and expensive, and almost impossible, where it would have to be done in swift running water. One of the objects was to be able to cut lightly, merely shaving off the surface, and to extend the range of cutting from eighty to two hundred feet. The various dredging machines which I have seen employed on the seaboard for clearing out harbors, for sinking foundations for piers, or for deepening bars, were all too heavy and unwieldy, to be at all applicable to the work required on the Ohio river. I will here make an extract from my letter to the bureau, proposing a plan for a machine of the kind required.

"There are several places along the river at which it will be advisable to change the direction of the channel, at others it will be necessary to widen it, and to remove certain lumps or inequalities from the bottom; wherever any of these operations have to me made in a gravel or sand bottom, if the water could be kept from the bed of the river, a common road scraper pulled by horses or oxen would present the most simple and ready means of effecting the object desired. It however happens that, in reality, we would, in most cases, be compelled to work in strong running water, one, two, three, or more feet deep, in which it would be tedious, difficult, and, indeed, often impossible, for men and horses to get along.

"Some fifteen years ago, when they were attempting to improve the navigation of the Great Kenawha, the contractors put their horses and men afloat. The arrangement for that purpose, which is represented in the accompanying sketch, consisted of two flat boats placed about fifty feet apart in the direction of the current, parallel to each other, and connected by beams laid over the ends of each boat; the whole system held in its position, or anchored, by piles passing through mortices, in the ends of these tie or cross beams, and iron stirrups in the gunwales of the boats. The wider boat carried the horses which turned a capstan, on which was wound a chain attached to the scraper, which latter was guided and directed by four men, walking on two parallel beams, a proper distance apart; these beams being moveable, and resting upon both boats. This arrangement will answer to enlarge a channel to a hundred feet in width, by working fifty feet on each side of the middle of it. The objections to it are, that it is cumbersome, difficult to move about, and would be in the way of the passing boats, which are so constantly plying on all parts of the Ohio. The patent right taken out for this invention has, as I understood, only a year or two to run. The patentees charge $100 for each set of boats.

Mr. Henry McCarty, a very ingenious man, who was formerly employed by me on the river improvements, has proposed a plan for overcoming these difficulties. It is to replace the beams on which the men guiding the scraper walked, by a small boat, which is to swing by a long line anchored a sufficient distance up stream, so as to allow the small boat to traverse a flat arc, extending across the distance to be scraped, moving like one of the *fly ferry boats*. The power must be placed outside of the space over which the scraper works. It may often happen that the boat cannot float to the spot, whence the power must be directed; it will, therefore, be necessary to change the direction of the power by passing a line, or the chain communicating with the scraper, over a pulley or snatch-block suitably fixed on the shore; or else to move the power itself on to the shore opposite its proper point of application. The latter expedient I consider preferable. This will require that the power should be portable, which can be effected by putting it on castors or truck wheels, so that it might be moved along a temporary railway, laid of scantling, carried for that purpose. The power may be either steam or horse; I think steam will answer the better purpose. A ten-foot boiler, thirty inches diameter, with a one-foot flue, will generate enough steam to work a double engine, (each cylinder having 5½ inches bore and 22 inches stroke,) which will drive a shaft or windlass to wind up the chain attached to the scraper. The windlass will be so occupied as to be thrown in and out of gear at pleasure. This engine will cost six hundred dollars, will consume ten bushels of coal a day, and can be tended by one man." You sanctioned the plan and authorized the construction of a "steam-scraper boat," whereupon I immediately proceeded to fit one up. The cost is nearly $1,500. I got it into full operation by the 1st of August, since which time, it has been constantly at work with the most beneficial results. The monthly expenses of working it are about $300. It will readily penetrate the most compact gravel in the bed of the river, without any previous loosening or ploughing, and in one day it easily excavates fifty cubic yards of the same, and transports it a distance of one hundred feet, where it can be formed into the most durable and impervious of dams.

The expense of compact and hard gravel excavation will not exceed the rate of twenty-five cents a yard when the machine is given full work; and that of sand or loose gravel would be much less, say about ten cents a yard. I first set the machine to scrape off the top of some high lumps, thrown up by steamboats, at the foot of Brunot's island. This occupied only a few days. It has since been employed in widening and deepening the channel at Wollery's Trap. This work gave the machinery the severest trial it will be called upon to stand—the bed of the river at this point being formed of large pebbles from six to ten inches in diameter, firmly bedded together with small gravel. It has excavated and removed about 900 cubic yards of this character during the month of August.

In adopting either of the two methods of carrying on public works, (that by hired labor or that by contract,) the superintending engineer must be guided by the efficiency and economy of the one selected. I conceive the contract system to be the cheapest, and to be equally efficient with the other, when full specifications can be given of the work, its execution in all its stages supervised, and a fair competition excited among the rival bidders; but, when these conditions cannot be complied with, a contract is a premium to fraud. The construction of all dams on the Ohio, for concentrating the water in the navigable channel by stopping up all useless passages, was suitable work to let out by contract. The removal of snags and rocks could only be faithfully accomplished by persons on wages, under an efficient master workman, who would as readily labor in removing the largest and most dangerous, as the most trifling and slightest obstruction of the kind. I was directed by you to confine my expenditures to $50,000. I proposed to apply $35,000 of this amount to the construction of dams, and the remainder to the removal of snags, rocks, &c. I sought tenders for building the dams by advertisement. The competition was very great, and the bidders generally competent and efficient men. My estimate of the average cost of stone thrown into line of dams (the manner in which the dams are built) was fifty cents a ton; the average rate at which the work was let is thirty-six cents. I entered into seven contracts for as many new dams, but some of them also embraced the repairs of the old dams. Part of the machinery for fire hand machine boats were on hand; I have, however, equipped and built but two of them. They cost complete $2,000 each, and are worked for about $600 a month each.

Machine boat No. 1 commenced working at Pittsburg on the 8th of July, and worked on down to Opossum bar, 120 miles; thence was towed to Buffington's island, from which point it was worked down to Racoon island, an additional distance of 68 miles, on the 19th of August, at which date 179 snags, 122 large stone, from one to one hundred cubic feet each, 1,256 small stone under a cubic foot in size each, and one sunken coal boat, were removed, and the boilers taken out of a sunken steamboat. This boat proceeded rapidly over the upper part of the river, so as to reach Guyandot in time to remove the many dangerous rocks lying scattered over the shoals at that point, Big Sandy, and Greenupsburg; but I now apprehend that the high water in that part of the river will interfere with the work—the rocks being only readily found in low and clear water.

Machine boat No. 2 was intended to be worked more carefully over the upper part of the river. It left Pittsburg on the 15th of July, and reached Captina island, a distance of 107 miles, on the 19th of Augus, at which time it had removed 44 snags, 133 large rocks from one to one hundred cubic feet, 1,204 small stone under a cubic foot in size, one coal boat, and hull of a sunken steamboat.

In descending the river, the first contract let is for finishing the work heretofore commenced for improving *White's ripple* and *Wollery's trap*. The old dam is tight, and stands well, only having met with some slight injuries by the ice, which, on breaking up, is likely to tear away any large projecting stone on the top of the dam. I will here remark that, from my observation and experience, the smaller the stone the tighter and more permanent the dam. There is no greater security against the injury from ice and drift than finishing the dam with small stone, brought to a regular macadamized surface. In addition to the work formerly laid out at the trap, I added a dam, running from the left shore to the low water's edge, on the left of the enlarged channel, (this dam the contractor is now building,) and a low wing dam to form the low water boundary of the channel on the right. With the enlargement of the channel now being made by the *steam scrape boat*, this work, when finished, will exhibit the result of every principle which I think of adopting in the improvement of the river. The contractor delivers the stone at 46 cents a ton. The stone for these dams was either difficult to quarry or expensive to transport, which accounts for this being the highest rate given. The contractor has delivered about 5,000 tons up to this time.

Deadman's Island.—The steam scrape boat will be employed here in removing an old wing dam, and cutting a new channel down right shore.

Beaver Shoal.—I have had about forty laborers employed during the last month in excavating the rock from the bed of the new channel which is run down left shore. This is the only work of the kind which I anticipate undertaking on the Ohio; commencing at the foot, and making a thorough cut from twenty to thirty feet wide up to the head of the shoal, is the work now on hand, and which is to be the first done. This part presents the only difficulty: the enlargement of the channel to the requisite width, which ought not be less than one hundred and fifty feet, will be comparatively easy. This work keeps the men constantly in the water. The excavation is to be made three feet below the surface of the water when the river is at a two feet stage. The charge for the blast, and the patent fuze for igniting it, are put in a tin tube about twenty inches long, which is afterwards filled with sand and closed around the fuze (which is cut to the proper length) with a clay paste to keep out the water. A hole being drilled in the rock, the tin tube is inserted and the blast made. Without the patent fuze, the tin tube would have to be long enough for the top to come above the surface of the water. On the 26th of August, had made 666 blasts, consumed 17 kegs of powder, and 1600 feet of patent fuze, and excavated and removed 250 cubic yards of solid rock from the bed of the river. The same party engaged in this work have removed from the line of new channel three large trees with roots, 40 large blocks of stone averaging 20 cubic feet each, and about 150 yards of small stone, which were the remains of an old dam running across the new channel.

Black's Island.—The contractors are progressing very satisfactorily in the construction of the dam, for stopping up passage to the right of the island, and for concentrating the water in the channel. This dam is so located as to effect both objects; stone furnished at thirty-four cents a ton; quarry directly opposite dam; transportation short.

Brown's island.—The contractors have transported the stone (heretofore quarried) which was required for the repairs of this dam. The dam is very solid and tight—no leaks through or under it, but some over its upper edge passing in an inclined direction down through its lower slope. When the top of the dam is out of water it turns nearly all the water to the left of island. Only 4,000 cubic feet passed to the right of the island when there was over one hundred and fifty thousand cubic feet passing down the left. The cutting away the bar by the action of the current where the wing dam is placed has not given as regular a channel as would have been obtained by scraping. The improvement here continues to be of the most decided character. No boat, descending from Pittsburg, ever sticks at Brown's island. This has been the case ever since the dams were built. The dam at the head required eighteen inches increased elevation.

Mingo island.—The contractors have commenced transporting stone for building dam, to close passage to left of island, at the rate of 20 cents a ton for transportation merely.

Captina island.—The dam across the left chute was left unfinished when the works were suspended. This dam has been very much injured. There was one breach in it. To repair this, and give the requisite height and finish to dam, constituted the work to be done. The old work forming an excellent base for the stone that had to be put upon it. The contractors transported the stone, formerly quarried, for 25 cents a ton, and quarried and transported the additional quantity required, for 45 cents. The injuries received by this dam are chiefly to be attributed to the large stone which were on the top of it. Some of them have been rolled and washed entirely below the dam. That part of the dam which has stood, as in all similar cases, is perfectly tight, only leaking water over its upper edge. There is some work for the scrape boat in the passage to the right of the island where the channel requires some regulating and straightening.

Fish Creek island.—Dam to stop passage to left of island—new work. The contractors have quarried about 10,000 tons—all the stone which will be required, and have commenced transporting it. This dam will be finished in October. Stone furnished at 37½ cents a ton.

Petticoat ripple.—This was one of the shoals in the river. It required two wing dams, one from each shore, to concentrate the water in the channel. Both of the dams have been extended for nearly their whole length, though not given their full dimensions. The contractors furnish the stone for 37½ cents a ton, They have delivered about 6,000 tons. The action of the dams has already caused an increased depth in the channel, the direction of which is at present changeable, during the cutting out of the bar, by the action of the increased current.

Marietta island.—A jettee, built of small stone and brush, has been extended some distance down from the foot of the island. It is to concentrate the water so as to cut away the sand bar formed just above the mouth of the Muskingum. If the result is favorable, the channel can be made on the right of the island, giving a good landing or harbor to the town of Marietta, and rendering the entrance into the Muskingum river more accessible; the navigation of which stream is becoming of great importance since the completion of the lock and dam navigation, constructed upon that river at a vast expense by the State of Ohio.

Blennerhassett's island.—The improvements here are to stop up the passages to the left of the island, and between the island and Towhead, at its foot. The latter has been done, and immediately influenced the depth of water over the bar, which is now easily crossed. This shoal heretofore, at low water, always delayed, if it did not entirely stop, the boats attempting to pass it. The stone for these dams is delivered for 31½ cents. I suppose that there are 8,000 tons delivered by this time. The change in the original location of the dam at the head, while it has given a better direction, has carried it through deep water, and greatly increased the quantity of stone required to build it.

Buffington's island.—The wing dam, for concentrating the water in the passage to the left of the island, has been commenced by the contractor; and, although there have been some unfavorable circumstances to impede his operations, I have no doubt that he will certainly finish his contract. The new channel which is to be made on this side of the island will require some excavation and scraping to give it a proper direction. As soon as it is passable, I shall stop up the narrow chute to the right of the island. The stone is delivered for 37½ cents a ton. About 2,000 tons have been put into the dam. I have employed a supervisor for each of the contracts. He is constantly on the work—directs the placing of the stone on the line of the dam, and keeps a correct register of the quantity delivered.

In presenting my estimate for the next year, which amounts to one hundred and eighty-four thousand one hundred dollars, I have endeavored to bring it to a sum which you would willingly recommend, and Congress would cheerfully appropriate; but if I were solely guided by the importance of the work, and limited the amount to the sum which I could judiciously apply, without increasing the necessary contingent expenses, it would have been greatly increased. I have not offered, and do not now offer an estimate for the completion of the work, for there is much which may arise that I cannot pretend to foresee. The more costly part of the improvements, however, will be on the upper half of the river. What I now proceed to state is, in a great measure, conjectural. An expenditure of $500,000 will permanently improve many of the worst shoals, yet would still leave very much to be done. When we take into consideration the great quantity of drift or dead timber lying on the shores, the many leaning trees, with large roots, growing on its banks, and ready to topple over, we have before us the cause of the formation of new snags. Any one can see that it is much easier to destroy them in their present position than when they have been carried into the channel and are lodged in the stream. The work is here concentrated, and at hand, and might be done for $200 a running mile of shore; but the removal of snags, which is the important consideration in the Mississippi and Missouri rivers forms but a small part of the work necessary to be done on the Ohio. I am reluctant to hazard even a conjectural estimate for the final completion of the improvement of the navigation of the Ohio river above the falls, which, recollect, affords six hundred miles of the cheapest transportation by steam in the world, but will venture to say, that if two millions of dollars should be judiciously expended, that its navigation will thereafter be perfectly safe, and never interrupted by any thing but ice. I must not omit to state that the yearly expenditures on this river, even of small sums, give immediate and useful results, and do not require, as in the case of a long line of railroad or canal, the entire completion of the improvements before its ameliorating effects are felt by the navigating interests.

In the latter part of the seventeenth century, the French, under the adventurous La Salle, explored the Ohio, but for a long period, extending to the commencement of the settlement of Kentucky, the Indian's canoe, and the voyageur's and the trader's periogue and batteau were the only vessels launched on its waters. The rapid emigration to this landed region, soon followed by teeming products of the soil, called into use more capacious and substantial vessels. The architecture of the river craft ran speedily through the many phases of arks and flat boats, barges and keel boats, until it gave us the present steamboat, which is universally adopted on the Western waters, and is so peculiarly adapted to their navigation.

The steamboats on all the waters emptying into the Gulf of Mexico, are chiefly built above the falls of the Ohio. In a military point of view, the patriotic statesmen of our republic could have no nobler object than to discover the means of turning, on a sudden emergency, the ordinary industrial pursuits of the country into a war channel. If workshops and ship yards are in the interior of a country, vast expense is saved in preparations for their defence.

It requires no argument to show that the same labor and mechanism, if properly directed, could as readily build a steamship as a steamboat. We are popularly esteemed to be the most vulnerable on the Gulf coast; whereas, in fact, we actually have it in our power to build, equip, man, and run on the Gulf of Mexico, on twelve months' notice, more steam vessels than the greatest maritime power in the world can possibly concentrate there. The western country affords within itself every conceivable munition and material of war, maritime or land, except sulphur. Coal, which is now a profitable article of export, from the banks of the Monongahela to New Orleans, might be placed in depot, in any quantity, at all the principal harbors of the Gulf, for the use of the Government vessels. Besides the vast coal fields on the Ohio, there are quite extensive ones in some other of the western rivers. Kentucky can grow all the hemp that would be wanted for the cordage and sails of these vessels. The foundries of Pittsburg and Cincinnati could cast all the ordnance.

I did intend to compile some statistical facts, but those which I have been enabled to obtain are too partial to give any thing like a full conception of the magnitude and value of the vast commerce of the Ohio.

Respectfully submitted.

JOHN SANDERS,
Captain Engineers.

Col. J. J. Abert,
Chief Topographical Engineer.

Estimate of funds required for continuing the operations for improving the navigation of the Ohio river above the falls, during the year, from July 1, 1844, *to July* 1, 1845.

First Section—*from Pittsburg to Wheeling*, 90 *miles.*

Brunot's island.—Dam across right arm, 7,000 tons of stone at 35 cents	$2,450 00
Deer and Long islands.—Dams to stop passages to left of islands, to improve four foot stage and upwards, 10,000 tons, at 30 cents	3,000 00
Deadman's.—Dam to stop slew to the right of channel at head of ripple, 1,000 tons of stone, at 35 cents	350 00
Logstown bar.—Lateral and cross dams for concentrating water, 15,000 tons of stone, at 30 cents	4,500 00
Logstown bar.—Excavating new channel	3,000 00
Beaver shoals.—Lateral and cross dams, 30,000 tons, at 30 cents	9,000 00
Beaver shoals.—Excavating new channel through rock on left side	5,000 00
Racoon bar.—Wing dam, 6,000 tons, at 35 cents	2,100 00
Racoon bar.—Opening new channel down left shore	1,000 00
Baker's island.—Dam to stop up passages back of island and to concentrate water in channel, 10,000 tons, at 30 cents	3,000 00
Knustly's cluster.—Dam to stop passage back of islands, and wing dams to concentrate water in dams, 20,000 tons, at 30 cents	6,000 00
Wells's bar.—Wing dam to concentrate water in channel, 8,000 tons, at 35 cents	2,800 00
Peach-bottom bar.—Dams to stop up passages back of bar, and to concentrate water in channel, 10,000 tons, at 35 cents	3,500 00
Twin islands.—Dams to stop the passages around island, not used, 20,000 tons, at 35 cents	7,000 00
Wheeling island.—Dams to stop up passages to the right of island, and slew between channel and island, 12,000 tons, at 35 cents	4,200 00
Two hand-machine boats for lifting stones and snags, 4 months, at $600 a month each	4,800 00
One steam scrape boat, for 5 months, at $300 a month	1,500 00
Total estimate of first section	63,200 00

Second Section—*from Wheeling to Letart's falls*, 144 *miles.*

Boggs's island.—Dam to stop passage to right of island, 10,000 tons, at 35 cents	$3,500 00
McMahon's bar.—Improvement	1,000 00
Opposum bar.—Wing dam to concentrate water in channel, 8,000 tons, at 30 cents	2,400 00

ESTIMATE—Continued.

Fishing Creek bar.—Dam to stop passage back of bar, 10,000 tons, at 30 cents - - - - - -	$3,000 00
Williamson's island and Whitten's towhead.—Dams to stop passages back of island and between island and towhead, 15,000 tons, at 30 cents - - - - -	4,500 00
Wells's island.—Dam to stop passage back of island, 8,000 tons, at 30 cents - - - - - - -	2,400 00
Mill Creek island.—Dam to stop passage back of island, 10,000 tons, at 30 cents - - - - - -	3,000 00
Three Brothers.—10,000 tons, to stop up passages not used, at 30 cents - - - - - - - -	3,000 00
Marietta island.—Dam across left arm, 8,000 tons; wing dam on Virginia side, at foot of island, 22,000 tons; total, 30,000 tons, at 35 cents - - - - - -	10,500 00
Muskingum island.—Dam to stop passage left of island, 12,000 tons, at 30 cents - - - - - -	3,600 00
Cole's island.—Dam to stop passage to the left of island, 10,000 tons, at 30 cents - - - - - -	3,000 00
Newberry bar.—Dam to stop passage to left of island, 12,000 tons, at 30 cents - - - - - - -	3,600 00
Belleville bar.—Wing dams for concentrating water in channel, 15,000 tons, at 30 cents - - - - -	4,500 00
Belleville Island bar.—Dams to stop passages back of island, and between foot of island and dry bar, 10,000 tons, at 30 cents - - - - - - - -	3,000 00
Swan bar.—Wing dams, 6,000 tons, at 30 cents - -	1,800 00
Letart's island.—Dams to stop passages back of islands, and jettee from the foot of first island, 20,000 tons, at 30 cents	6,000 00
One hand machine boat, built and equipped with tenders, &c.	2,000 00
Working same 4 months, at $600 a month - - -	2,400 00
One steam scrape boat, building and equipping same with tenders, &c. - - - - - - - -	1,500 00
Working same 5 months, at $300 a month - - -	1,500 00
Total estimate of second section - - -	66,200 00

THIRD SECTION—*from Letart's falls to Portsmouth, mouth of Scioto,* 116 *miles.*

Racoon island.—To stop up one of the passages around island, 12,000 tons, at 35 cents - - - -	$4,200 00
Green Bottom bar.—Cutting new channel - - -	4,000 00
Construction of two hand machine boats, with tenders, &c., complete, $2,000 each - - - - - -	4,000 00
Working hand machine boats 4 months, at $600 each a month - - - - - - - -	4,800 00
Total estimate of third section - - -	17,000 00

ESTIMATE—Continued.

FOURTH SECTION—*from Portsmouth to Louisville, falls of the Ohio, 255 miles.*	
Construction of hull and putting up engine of steam snag boat - - - - - - - -	$7,500 00
Working same four months, at $1,500 a month - -	6,000 00
Brush creek.—Improvements - - - - -	5,000 00
Warsaw bar.—Improvements - - - - -	5,000 00
Grassy flats.—Improvements - - - - -	5,000 00
Total estimate of fourth section - - -	28,500 00

Recapitulation.

For first section - - - - - - -	$63,200 00
For second section - - - - - - -	66,200 00
For third section - - - - - - -	17,000 00
For fourth section - - - - - - -	28,500 00
Office expenses, stationery, &c., at $100 a month - -	1,200 00
Contingencies - - - - - - -	8,000 00
Total - - - - - -	184,100 00

JOHN SANDERS,
Captain Engineers.

Col. J. J. ABERT,
Chief Corps Topographical Engineers.

OFFICE OHIO RIVER IMPROVEMENTS,
Pittsburg, September 1, 1843.

No. 4.

ALBANY, *September* 30, 1843.

SIR: While absent in Europe, in the year 1841, I availed myself of a favorable opportunity to visit Holland, for the purpose of examining the hydraulic works, the canals, dikes, and drainage, for which that country is so justly celebrated.

Through the kind intervention of Mr. Bleecker, our representative at the Hague, and of Mr. Talcke, the Netherlands minister to Brussels, I obtained access to manuscript reports and maps which had never been published. I was also indebted to Mr. Goudrian, of the Water Staat, and to Mr. Simons, civil engineer, for much valuable information, touching the objects of my investigation, drawn from official documents.

From the sources* above enumerated, and from information derived from personal observation, I have written the following paper, which (although not prepared under specific instructions) I beg leave to submit to you in the form of an official report, in the hope that it may prove of some practical utility, not only to the corps over which you preside, in the discharge of its multifarious duties, but also in advancing the general interests of the country.

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* It is proper to observe that the greater portion of this paper, *relating to the drainage of the lake* of Haarlem, is a pretty literal translation of the manuscript report by the engineer, Mr. G. Simons, and that, in the general remarks, I have occasionally consulted Murray, and other authorities, for facts, when my own notes were not sufficiently full.

Before proceeding to a consideration of the public works above indicated, it may be advisable, for a better understanding of the subject, to enter upon a brief description of the remarkable country of whose physical necessities they are the offspring.

The kingdom of Holland (bounded on the west and north by the North sea, on the east by Hanover and Prussia, and on the south by Belgium) consists of the following provinces, through which the Scheldt, Maas, and the several branches of the Rhine, discharge their waters into the German ocean, viz: North Brabant, Zealand, South Holland, Overyssel, Friesland, Dreuthe, and Groningen, containing a population of nearly 2,800,000 souls.

In traversing that part of Europe which was significantly called "the Netherlands," and a portion of France included, on the sea coast, between the Helder and Dunkirk, the conclusion is forced on the mind of the reflective traveller, that the whole of the "low countries" is alluvion—the wash of the higher regions of Germany, borne down by the Maas, and the various tributaries and branches of the Rhine, and deposited from their muddy waters.*

At an early period, before the skill, industry, and science of man, were called into requisition, where now flourish populous cities, rich meadows, and waving fields of corn, the sea disputed the empire with the land, and at least twice in each day asserted its supremacy. Even at so comparatively a recent date as the invasion of Germany by Julius Cæsar, the whole of this region of country was regularly overflowed by the ocean, with the exception of a few scattered mounds, on which a brave, hardy, independent, but sparse population existed, mainly relying for food on the fish left on the sands by the ebbing tides, and preferring a precarious subsistence among their native fens to the luxuries and refinements of Roman life.

The exact process by which the Netherlands have been reclaimed from the sea has not yet been fully described. Natural causes having first produced an alluvial swamp by a process similar to that which is still in action in different portions of the globe, (more especially in the deltas of the Nile and the Mississippi, under the combined influence of which, and the exertions of man, Egypt and Louisiana have gradually emerged from the dominion of the waters,) a certain degree of art has been employed to erect barriers, by which the influx of the sea was prevented.

This first step having been gained, it remained to drain the marsh thus enclosed.

This operation was of course slow and laborious; for, as the surface of the ground was below the level of the ocean, the water was elevated into artificial channels, through which it might be discharged at low tides.

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* The process seems to be still actively going on, as may be seen at the mouth of the rivers Scheldt and Maas, where extensive low reedy mud banks, tufted with the marine grass, are exposed at tolerably low tides; and there can be no doubt that, with due exertion, a good many square miles of new land might be added to the territory of Holland.

And here, again, Nature interposed, and lent her powerful assistance to co-operate with the efforts of man in staying the progress of the sea, and checking its encroachments. For centuries her exertions have been employed in raising and increasing bulwarks to resist tidal inundations.* The constant action of the winds on the sandy beach, when exposed at low water, have caused the formation of large mounds, or "dunes," as they are called, elevated considerably above the highest tides, rising in some cases so high as to conceal from view churches and chateaux. These downs extend, with but little interruption, like a range of hills of variable height, from Alkmaar, in the neighborhood of the Helder, to the vicinity of Dunkirk, a distance of about 130 English miles. The wind, blowing fresh from the German ocean, raises the fine and dry particles of sand from the beach, (where it has been deposited by the waves,) which are drifted, like snow, up the outer faces of the banks or dikes, either adding to their height, or being carried over and behind them, according to the intensity of the moving force. In the latter case, the breadth of the dunes is increased, and they do indeed vary from one† to three miles in width. The benefit resulting from this accumulation of sand is not, however, unattended with evil consequences, as there is a continual tendency of the sand to invade the arable lands. To prevent the further encroachments of the sand, and to counteract its evil action, the dunes are every year sown with a species of reedy or lenty grass, (the *arundo* arenania,) growing in the vicinity of the sea, which finds in the sands a kind and congenial soil. The roots soon spread, strike deeply into the ground, and so intertwine that the sand is held firmly between them; and, as the growth of the grass is luxuriant, the decomposition of its successive crops at last forms a soil sufficiently rich to produce (it is said) potatoes, and to bear plantations of firs. By this process, the moving sands become fixed and harmless, or rather, like every thing else in this wonderful and utilitarian country, are rendered tributary to the wants of man. Before attempts had been made to prevent this movement of the sand, it had, in the process of years, penetrated far into the interior; and quite recently many hillocks have been removed, for the purpose of cultivating the virgin soil beneath, which was found to have lost none of its value by this long entombment.

The efforts of the inhabitants of the country to shut out the waters have been mainly directed to those portions of the coast where the natural dunes do not exist, and to the margins of the rivers and interior lakes.

In the construction of dikes, the first essential is to secure a firm foundation, sufficiently solid to sustain the weighty superstructure to be reared upon it. To effect this object, various expedients are resorted to, such as the compression of the natural soil, the laying a substratum of clay or of fascines, the driving of piles, the filling in of stone, and the formation, in some cases, where wood can be readily procured, of grillages or platforms. On this substructure is built the dike proper, consisting of successive strata of earth, clay, and sand, consolidated by ramming, and bound together by straw, rushes, reeds, or fascines. The sea slope is protected by a species of gabion or close wicker work of osier twigs, the spaces being filled with clay or puddling, to prevent the percolation of water. This portion of the work is of course liable to rapid decay; but, for the purpose of furnishing the branches with which to renew it economically, and partly with the view of more firmly uniting with their roots the materials of which the ramparts are composed, willow trees are abundantly cultivated along the dikes. When these structures are much exposed to the fury of the ocean, they are faced with masonry and protected at the base by vast mounds of rock or rows of piles, forming artificial breakwaters. The upper surface is covered with turf, and is, in many places, more than 40 feet above the level of the sea at low tide.

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* The same result may be seen on the Gulf of Mexico, from St. Joseph's, in Florida, to Mobile, in Alabama, and perhaps for a much greater extent on the coast. These sand banks or downs, composed of a fine and very white sand, present very much the appearance of immense snow drifts in more wintry climes.

† Professor Van Hampen says they are from a quarter to two leagues wide.

The most wonderful embankments in the world, perhaps, are those of the Helder and of West Kappel, on the island of Walcheren.

The Helder is a fortified town at the northern extreme of North Holland, opposite to the isle of Texel, and, being greatly exposed to the action of the winds and the waves, is enclosed on every side by stupendous dikes.

The author of "A Journey in North Holland" thus describes it: "The great dike of the Helder, which is nearly two leagues in length, is 40 feet broad at the summit, over which there is a very good road. It descends into the sea by a slope of 200 feet, inclining about 40 degrees. The highest tides are far from covering the top—the lowest are equally far from showing the base. At certain distances, enormous buttresses, broad and high in proportion to the rest, and constructed with still greater solidity, project several toises into the sea. This artificial and gigantic coast is entirely composed of blocks of granite, all brought from Norway; and these masses, which look as if it were impossible to move them, are levelled and squared like a pavement. The number of rocks which are seen at one view are sufficient to confound the imagination. How much more when we think on the quantities buried beneath the waves, to serve as the foundation of such mountains."

This great work stands an enduring monument to the memory of Napoleon, by whose commands it was constructed. He called it his northern Gibraltar.

The lowest land on the Dutch coast is in the province of Zealand, or "sea land," as it is called from that circumstance. It consists of nine islands, (separated from one another by the different branches of the Scheldt,) the largest of which is Walcheren, on whose western extremity stands West Kappel. This latter position was defended by one of the most enormous sea walls in the Netherlands, which was overwhelmed by a violent tempest in 1808, and nearly the whole island in consequence submerged. The inundation would have been universal but for the existence of the secondary dikes running across the island. The extent of Zealand dikes is said to be at least 300 miles, and to cost for annual repairs and preservation about $800,000; while the sum total expended for similar objects, and for the regulation of the water levels throughout Holland, amounts to nearly $3,000,000 per annum.

The interior embankments are nearly as extensive as the sea dikes; and, at times, as much danger is to be apprehended from the irruptions of the rivers as from the ocean. The one may be compared to a foreign enemy boldly assailing the frontiers—the other to a secret foe insidiously undermining the domestic institutions of the country.

The ocean having been shut out from the land by the ramparts already described, and the rivers having been confined within proper bounds, the next question was to get rid of the downfall water and the waters which had subsided in the small lakes whose bottoms were *below* the level of ordinary *low tides*. Embankments seem, in the first instance, to have been formed (the materials for them having been taken from alongside) on a level with the rivers at certain stages of the tides, and on these embankments canals were *built*, and rendered watertight by puddling. These canals were provided with lift locks and sluices at their embouchures, by which latter contrivance the surplus water might be discharged when the tides fell below their level. The side ditches formed by the excavation would suffice to drain all the lands which would (before the dikes were erected) have been exposed at low water. These side ditches, or *small canals* as they may be called, are frequently intersected by lateral ditches, which answer a threefold purpose—1st, for drainage; 2d, for channels of transportation for the small farmers to house their crops or to send them to the next market-town; and, 3d, as boundary lines and as substitutes for fences.

The first class of canals are intended principally for great commercial purposes, and will be treated of separately. The small canals are often seen passing underneath the larger ones, and two boats may cross each other at the same moment of time on different levels.

The *second* class of canals, as we have already shown, are of a mixed character, but their primary object was for the drainage of the country. It must be obvious, however, that no system of ditching alone can free a country of water lying below the level of low tides. To drain the ponds or small lakes, the waters must be raised sufficiently high to be discharged at low tides. This has been effected mainly by the power of the wind; for in Holland even the wind is not allowed to blow without being turned to some *useful* purpose. It is applied not only in drainage, but in grinding grain, tobacco, painters' colors, and rape seed for oil—in making paper and in sawing timber. Some idea of the extent to which the wind is employed may be formed from the fact that, in the vicinity of Spaardam, a town of 9,000 inhabitants, there are 400 wind mills, some of them of enormous size.

The morass or lake to be drained is first surrounded by an earthen bank, to cut off the flow of water from higher grounds. Along this dike wind mills are erected, to elevate the water into a channel so high that it may be eventually discharged into the ocean.

It sometimes happens that this cannot be done at one operation, as wind mills cannot be effectually used to raise water to much more than a five-feet lift, which is in fact its maximum of useful effect. If it should become necessary to overcome much more than that height, another set of mills must be established; and in some cases there have been as many as four separate stages formed, each stage having its own set of mills, and a separate canal, from which, in turn, the surplus waters are expelled.

These canals also serve as enclosures, rendering fences unnecessary. The lands there reclaimed are called *polders*, and the girdle of wind mills which announce, at a distance, the frontiers of these polders, have been compared to a chain of gigantic sentinels, placed to guard the approaches.

It is easy to conceive the extreme fertility of land managed in this manner. Formed originally of mud, which was itself rich, it is covered almost all the year round with herbs, which contribute to its fertility. All the water which might be injurious is drawn off at pleasure, by means of the mills, and a regular gradual irrigation is introduced at the most favorable moment. Pumps are not often employed in the drainage of land, on account of the great friction, which unfits them for that purpose; but in their stead are used the Eckhardt wheel, the Archimedean screw, and the scoop wheel.

By these means have been drained, in the province of Holland:

From 1440 to 1600=23,649 acres of arable land.
From 1600 to 1650=71,006 do do.
From 1650 to 1700= 5,370 do do.
From 1700 to 1750=10,309 do do.
From 1750 to 1841=23,880 do do.

Making, in all, 173,482 acres, previous to the beginning of the draining of Haarlem sea.*

The most gigantic work of the kind ever undertaken in this or any other country is the draining of the lake of Haarlem, or Haarlem sea, as it is often and appropriately called. On my way to Amsterdam, I crossed an arm of this lake, which, being at the time greatly agitated by the winds, presented the appearance of an angry sea, its waves breaking with great force against the restraining dikes.

This lake was formed, as has been stated in another portion of this paper, by a frightful eruption towards the close of the 16th century. It is 13½ miles long in the direction of its greatest length, with a maximum breadth of eight and a half miles, and covers 44,480 acres of land; it is on an average about 13 feet deep, (the whole of which body of water is to be raised a mean height of 6½ feet,) the bottom being composed of a very soft mud—the debris of the higher regions of Germany and Switzerland. The mud is a mixture of silicious earth and clay, and is employed in the manufacture of the small clinker bricks with which the Dutch roads are paved.

The lake of Haarlem forms a part of the great water basin (reservoir, *boezem* in Dutch) of Rynland, a large district, containing 249,090 acres of land, exclusive of the basin itself, whose surface now is 56,090. All the rain water which falls on the 305,180 acres, and which is not exhaled, is gathered or pumped up by wind mills into the basin, to be discharged at low water:

1st. Into the ———, through the sluices at Spaardam, and at Halfway (Halfwege) between Haarlem and Amsterdam.
2d. Into the river Yssel, near Gouda.
3d. Into the North sea, through the sluices at Katwijk.

The lake of Haarlem, containing 44,480 acres, when drained, will reduce the basin of Rynland from 56,090 to 11,610 acres. It will be clear, by the following explanations, that the effect would be pernicious to Rynland if the reduction were not balanced by improving the old or creating new means of discharging the superfluous quantity of water—the more so, as the lake itself will be emptied into the basin so reduced.

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* There is a great deal of very rich land in Louisiana, belonging to the United States, that might be reclaimed at a comparatively low cost. I refer more particularly to an extensive district of country west of the Lafourche, embraced between Thibodeauville, the Attakapas canal, Lake Long, and bayou Blue. The greater portion of this tract could be drained by ditches and *Artesian wells*; but a small part of it might be kept free from the downfall water, and the infiltration from the Lafourche, by means of wind mills, which, when not wanted for drainage, might be used for other purposes. This would make one of the finest rice regions in the world, and would possess great advantages, from the manner in which it might be irrigated, and the water expelled when it was no longer required.

[1]

Table showing the mean level, for the different months of the year, 1st, of the Y, at Spaardam; 2d, of the Ysel near Gouda; 3d, of the North sea at Katwijk; 4th, of the basin of Rynland, in English inches, above (+) or beneath (—) the comparative point by which the height of the water is generally calculated in Holland, which point is called Amsterdamsch Peil, (Amsterdam mark,) and indicated by the letters A. P.—the Amsterdam mark, or A. P., is on a level with the ordinary high water of the Y at Amsterdam.

	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
	At high water.	At low water.	At high water.	At low water.	At high water.	At low water.	At high water.	At low water.	At high water.	At low water.	At high water.	At low water.	At high water.	At low water.	At high water.	At low water.	At high water.	At low water.	At high water.	At low water.	At high water.	At low water.	At high water.	At low water.
	+ A. P.	— A. P.	+ A. P.	— A. P.	+ A. P.	— A. P.	+ A. P.	— A. P.	+ A. P.	— A. P.	+ A. P.	— A. P.	+ A. P.	— A. P.	+ A. P.	— A. P.	+ A. P.	— A. P.	+ A. P.	— A. P.	+ A. P.	— A. P.	+ A. P.	— A. P.
Mean level of the Y at Spaardam	2.66	9.76	2.68	10.13	4.76	12.07	4.98	11.51	6.05	10 55	6.25	10.40	6.17	10.17	6.36	10.10	8.20	2	8.96	9.05	11.31	7.66	8.71	10.80
Mean level of the Ysel near Gouda	35.08	12.83	37.52	13.33	45.33	11.90	43.09	14.53	42.20	17.49	43.05	17.01	44.05	14.11	42.97	13.80	40.81	14.10	40.63	13.87	42.31	6.82	40.92	5.85
Mean level of the North sea at Katwijk	34.60	33.62	34.69	33.25	37.09	31.14	35.83	31.36	35.49	30.39	36.23	27.08	36.50	25.05	36.44	25.11	34.98	23.90	36.37	22.66	38.13	23.04	38.24	26.15
Mean level of the basin Rynland	— A. P. 16.75		— A. P. 16.50		— A. P. 15.90		— A. P. 17.17		— A. P. 19.79		— A. P. 23.82		— A. P. 26.43		— A. P. 26.38		— A. P. 23.43		— A. P. 22.69		— A. P. 18.25		— A. P. 15.87	

From an inspection of this table, it appears that the only regular evacuation is through the sluices at Katwijk. Nevertheless, a great and perhaps a greater quantity of water is discharged into the Y, through the sluices at Spaardam and Halfway, which were, with the less important evacuation at Gouda, the only means till 1807, when the sluices at Katwijk were constructed.

It is not difficult to account for the great quantity of water discharged into the Y, although its mean ebb be higher than the mean level of the Rynland basin. The southwest is the most prevailing wind; it lowers the waters of the Y before the sluices, and elevates, at the same time, behind them, the waters of the basin, whose level is often thus raised above such extraordinary ebb of the Y. This circumstance was of the more importance, as the conducting canals to the sluices at Katwijk were not of great capacity, although quite sufficient to answer their purpose in the present condition of Rynland. It is clear that the draining of the lake will greatly lessen the effect of the wind in raising the waters behind the sluices at Spaardam and Halfway, and that it will diminish, in the same proportion, the evacuation through those sluices.

A large basin, such as that of Rynland now is, has moreover a great advantage. The waters from the lower lands, as the greatest part of Rynland are, must be pumped up by wind mills. The larger that basin is, the less will its level be raised by the waters discharged into it; and this not only diminishes the height to which those waters must be lifted, and so augments in the same proportion the efficacy of the wind mills, but the result is likewise that the evacuation is possible, which is not always the case in other districts with smaller basins, the level of which is not to be raised beyond certain limits.

The first object, then, in draining the lake of Haarlem, must be to secure Rynland against all evil consequences. To this end, a new canal, as the map will show, of great capacity, (1) has been made from the Zee to the canal of Katwijk, to which the waters of Rynland were formerly conducted through the narrow and winding Rynsburger vliet. The canal of Katwijk itself has been widened to nearly 171 feet, (2) and in the same proportion the capacity will be augmented of the interior sluices, whilst the capacity of the exterior ones is considered large enough to answer the purpose, after the intended change. With a view to the same object, (the protection of Rynland,) a double acting steam engine of more than 200-horse power will be erected at Spaardam, adapted to scoop wheels of 20 feet diameter, by which the water from the basin may be discharged into the Y, whenever the ordinary evacuation through the sluices fails.

Besides the security of Rynland, there has also to be taken into consideration another object, perhaps of less importance—the inland navigation. The lake of Haarlem being surrounded by numerous canals, situated between large towns and rich villages, in the very heart of the most populous, opulent, and mercantile province of the kingdom, it is evident that it must be of great utility to the inland commerce and navigatton, the importance of which will appear from the fact that 20,000 vessels are crossing the lake every year. The draining would therefore be most injurious to the intercourse of the interior, if this were not provided for by an ample canal, dug round the lake, deep enough for the passage of the largest vessels now crossing the lake. Along the banks of the surrounding canal (ringbaart) there is to be made a road or path, for the purpose of towing the vessels by horses whenever the wind is not favorable.

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(1) Length of the canal - - - - 4,235 metres=13,895 English feet.
Width of the canal at A. P. - - - 40 metres=131.2 English feet.
Width of the canal at bottom - - - 31.2 metres=102.4 English feet.
Depth - - - - - - 2.2 metres=7.2 English feet.

(2) Present width of the canal at A. P. - - 52. metres=170.6 English feet.
Present width of the canal at bottom - - 42.2 metres=141.7 English feet.
Depth of the canal - - - - 2.2 metres=7.2 English feet.

These remarks were deemed necessary, not only to account for all the expenses, but also to explain the reasons why, after so many other and great works of the same kind had been successfully executed, the draining of the Haarlem lake was so long deferred, the first project for that purpose having been proposed as early as 1632.

The canal around the lake, already referred to, will form a part of the Rynland basin, as the lake of Haarlem now does. The reduced size of that basin will thus be augmented by that canal, 131 feet wide at A. P., 73 feet at bottom, 10 feet deep from A. P. (4) The length of the canal being nearly 34 English miles, its surface at A. P. will be more than 540 acres.

The first thing to be done in this, as in all other cases where lands beneath the surface of the surrounding wtaers are to be drained, is to construct a dike around the whole extent, so that the lands may be protected against the action of those waters. Where the grounds on which the dike is to be raised, and the materials of which it is to be made, are bad, (that is, light, porous, and watery,) as is generally the case in Holland, the dike must be not only higher than the highest level of the surrounding waters, but it must be very massive at the same time, in order that the subjacent grounds and the materials of the dike itself may be duly compressed and perfectly united together in one firm and solid mass, so as to prevent the infiltration of the exterior waters. Whenever the ground is extremely bad, and the dike not large enough, this infiltration may be very injurious, and become permanent, as is the case with some drained lands; but, in the first years after the draining, a greater or less degree of filtration always takes place, even when the dike is built with the greatest care, as it requires some time before it is sufficiently settled and compressed to resist the percolation of water through it. These are the reasons why the dike for the draining of Haarlem lake will be higher than the level of the surrounding waters may seem to require. Its dimensions may be seen by the transverse section (profile) indicated on the map. Its top is 7 English feet 10.49 inches (2.40 metres) above Amsterdam mark, (Amsterdam peil—A. P.;) (5) the inner (the side towards the lake) slope is five times the height, therefore 39 feet 4.45 inches (12 metres) at A. P.; the outer (sloping towards the surrounding canal) is 6 feet 6.74 inches (2 metres) from the top to the height of 6 feet 6.74 inches above A. P., and from these twice the height; therefore, 13 feet 1.48 inch

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(4) The lowest level of the Rynland basin, and consequently of the surrounding canal, which is to form a part of it, being not even 2½ feet beneath A. P., there will always remain a depth of water of more than 7½ feet, which is quite sufficient for the largest vessels now crossing the lake.

(5) The highest mean level of the surrounding waters (of Rynland basin) indicated in the table, is 15.57 inches, A. P.; but in extraordinary cases this level rises sometimes to 10 inches, A. P. The top of the dike will therefore be more than 8½ feet above the highest level of the surrounding waters; but the dike will be somewhat lowered by the compression (inklinking) already mentioned.

(4 metres) at A. P. The breadth of the dike at A. P. is 59 feet=18 metres.

Two-thirds of the surrounding canal are already dug, and the same length of dike has been built, chiefly of the earths excavated from the canal. The most expensive part of the dike would have been at the east side of the lake, where large and deep pools are situated near the lake, and only separated from it by a narrow tract of very porous land, almost floating on the water, and presenting therefore the very worst possible foundation for an embankment. But more than seventy years ago a dike was raised on this side of the lake, at enormous expense, to prevent the threatened junction of the Haarlem lake with the adjacent pools, which would have been most destructive, not only to the neighboring lands and villages, especially to Aalsmeer, but even to the whole province of Holland. (6) This dike, stretching from Oude-wetering to Nieuve-meer, a length of nearly 10 English miles, is a very substantial and solid one, although not so high as the dike now in progress, but with comparatively small costs it may be made of the same height, the materials for which are provided by the excavation of the canal on this side.

Between the dike and the surrounding canal, a road is to be made 19 feet 8 inches (6 metres) broad. (Vide map.) On the other side of the canal, at a distance of more than 13 feet (4 metres) there is to be a small dike, (,) whose transverse section is also represented on the map to separate the works of the Haarlem lake from the adjacent lands, and to protect them against the waters of the canal.

In this, as in all other similar cases, the power employed in draining should be proportioned to the force necessary to keep the lands constantly dry after the draining. The greatest quantity of rain fallen in a month was 6,524 inches more than the evaporation, according to 98 years of observations at Halfway (Halfwege) between Haarlem and Amsterdam, consequently in the neighborhood of the lake. It is therefore highly improbable that the quantity of water to be discharged in a month will ever exceed a depth of 8 inches, allowing even 1,476 inches for infiltration. (7)

The lake of Haarlem contains 44,480 acres, or 1,937,548,800 square feet; on this surface 8 inches of depth make a mass of 1,291,699,200 cubic feet of water, or 1,291,699,200 × 62½ = 80,731,200,000 lbs., a cubic foot of water weighing nearly 62½ lbs. The level of the drains to be made within the drained lake or intended polder will never be more than 16 feet below the surface of the surrounding canal, into which the water is to be discharged; consequently the lands will be kept dry, even under the most unfavorable circumstances, by a power capable of raising 80,731,200,000 lbs. 16 feet, or 1,291,699,200,000 lbs. 1 foot in a month. Allowing 5 days for cleaning and repairing machinery, there remain 25 days in a month for working the steam engines by which the lake is to be emptied; the horse power must therefore be $\frac{1,291,699,200,000}{33,000 \times 60 \times 24 \times 25} = 1,087.$ (8)

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(6) The sheet of water, now known under the general name of Haarlem lake, was formed by the irruption and junction of different lakes. Three villages, Bythinger, Neuimerhock, and Ryk, were swallowed up by the waves at different times, and even greater destruction was imminent, when the dike at the east side of the lake was raised in 1767, by orders of the States of Holland. Since that time the borders have been preserved at immense costs, (30,000 florins, or $12,000 annually,) paid by the district of Rynland, with the assistance from Holland or the General Government.

(7) This estimate is founded on unfavorable examples; and it is not probable that the infiltration will be so great, even in the years immediately succeeding the ordinary.

Although this power may be quite sufficient, it is nevertheless prudent, in a work of such importance as the one in question, to use one greater than that indicated by calculations founded at best upon uncertain data.

For this reason, it has been determined to employ six engines of 200 horse power each. As to the description of engines to be thus employed, they will be single acting pumping engines, which, as is well known, perform the greatest duty, and are therefore the most economical. There is, besides, another advantage in using pumps; the water may be raised by them 16 feet at one lift, whereas it cannot conveniently be raised to that height at less than three lifts by scoop wheels, or two lifts by Archimedean screws, which are the two sorts of hydraulic engines generally and almost solely used in Holland. The kind of pumps to be used is not yet fixed upon. The steam engines will be erected as indicated on the maps—two at Lutkemeer, two at Zuider-Spaarrne, and two at Kagermeer, as the most convenient places for the discharging of the water.

The surface of the lake being 1,937,548,800 square feet, and its depth 13 feet, it contains 25,188,134,400 cubic feet of water. This mass must be raised to the mean height of 6½ feet, or, by reduction, 25,188,134,400 × 6½ = 163,722,873,600 cubic feet = 10,232,679,600,000 pounds, are to be raised one foot.

To this quantity must be added the filtration water, and the rain likely to fall during the draining. According to the alleged observations, made at Halfway, between Haarlem and Amsterdam, the average quantity of rain, surpassing the quantity of evaporation, is, during winter (from September to March) 9 inches; and during summer (from April to August) the quantity of evaporation surpasses the quantity of rain by 6 inches; there remain, therefore, annually, 3 inches of rain not exhaled. But, as it often happens in wet years that the quantity is much greater, it will be more safe to suppose, during the draining, the double, and therefore 6 inches a year, or, on an average, ½ inch per month. The filtration during the same period has already been estimated at 1½ inch, which, together with ½ inch of rain, consequently make 2 inches per month.

Taking this for granted, it will appear that the lake may be emptied in 8 months by a 1,200 horse power. The rain and filtration water will be in 8 months $1,937,548,800 \times \frac{16}{12} = 2,583,398,400$ cubic feet, which must be lifted to the mean height of 6½ feet: thus 6½ × 2,583,398,400 = 16,792,089,600 cubic feet, or 16,792,089,600 × 62½ = 1,049,505,600,000 pounds to be raised 1 foot. This quantity added to the aforesaid 10,232,679,600,000 pounds makes the whole mass 11,282,185,200,000 pounds to be raised 1 foot. A 1,200 horse power will raise to the same height, in 8 months, or 200 days, (supposing as before 25 working days per month,) 33,000×60×24×200×1,200=11,404,800,000,000 pounds.

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(8) This power is much greater than is generally used in polders drained by wind mills, the costs of the erection of which for extraordinary cases would be too great, the more so as the additional provision of wind mills would even be of little use, the wind often failing when it is most required.

It is a general practice, when low lands are to be kept dry, to erect one wind mill of the largest size (the sweeps of which are from 80 to 90 feet) for every 1,250 acres and 5 feet lift. Now, it has been proved by numerous observations that the whole annual effect of such a wind mill does not exceed 695,220,000 cubic feet of water raised one foot; therefore, the average effect in a month will be 57,935,000 cubic feet raised to the same height. This effect is not a third of what would be required to discharge 8 inches of depth, making on a surface of 1,250 acres, or 54,450,000 square feet, 36,300,000 cubic feet to be raised 5 feet, equal to 181,500,000 cubic feet to be raised one foot.

But it is evident that in the beginning, at low lifts of a few inches, the steam engines will not act with their whole power, nor perform so great a duty as they will do afterwards at higher lifts. For this reason, it has been thought better to suppose that 14 months will be required to empty the lake, and to calculate the necessary quantity of fuel, as if the steam engines were to be working during that period with their whole power.

For the annual draining, the average quantity of water to be discharged may be thus calculated:

Rain, in winter - - - - -	9 inches.	
In filtration during 7 months, (from September to March) - - - - - -	10½ inches	
		19½ in.
In filtration in summer, (from April to August) -	7½ inches.	
Evaporation in summer - - - -	3 "	
		4½ in.

Total, 24 inches, or 2 feet. (9)

The mass of water will therefore be 1,937,548,800×2 = 3,875,097,600 cubic feet, to be raised 16 feet, (§ 8,) or, by reduction, 62,001,561,600 cubic feet is = 3,875,097,600,000 pounds, to be raised one foot.

As 33,000×60×24×1,200×68 is = 3,877,632,000,000, the 1,200 horse power will raise that mass in 68 days, which, consequently, may be taken for the average number of days that the engines must be annually in operation.

After the draining, a number of ditches will be dug through the drained lands, (this is called *rockarden*, which means a division into regular compartments,) that they may be divided into convenient portions, and that the water falling on them may be collected and conducted to the discharging steam engines.

Having thus briefly described the works, we will now proceed to give an approximate estimate of the costs.

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(9) It is clear that it will be sometimes necessary, or at least useful, to discharge in summer the heavy rain falling on the lands, and that this should be added to the quantity computed. But it has been remarked, in note 7, that the filtration, although it may be, in the beginning, so great as stated, will assuredly be much less, if any, at a later period. The whole average quantity of water calculated to be discharged annually is even much greater than can be deduced from examples of similar cases. In note 8 it has been stated—1st. That generally one wind mill is erected for every 1,250 acres (54,450,000 square feet) and 5 feet lift. 2d. That the annual effect of a first-class wind mill does not exceed 695,220,000 cubic feet of water lifted one foot. Now, it is a general observation that even less than half of this effect is sufficient to keep the lands dry in ordinary cases, and that, therefore, the usual number of wind mills might be reduced to the half, were it not necessary that nearly the whole quantity of superfluous water should be discharged in a few months. This being granted, we have only to divide the half of 695,220,000 or 347,610,000 by 54,450,000 ×5, and multiply the quantity by 12, to find the average annual charge of water in inches. As $\frac{347,610,000\times 12}{54,450,000\times 5}$ is = 15⅓ nearly, it follows that the annual quantity of water is not more than 15⅓ inches, instead of 24, as was supposed. If it were not that too favorable calculations might lead to disappointments, the average annual number of working days for the steam engines might be reduced 68 to 42, or even less. $\left(\frac{68\times 15\frac{1}{3}}{24} = 41.2.\right)$

	Florins.
A. The canal from the Zee to the canal of Katwijk (§ 3) has been made for - - - - -	140,000
The canal of Katwijk has been widened (§ 3) for - -	72,000
Two stone bridges over it have been lengthened for - -	34,500
Three wooden bridges over the canal, from the Zee - -	37,900
It is calculated that the interior sluices of Katwijk canal will be widened for - - - - - - - -	70,000
The steam engine to be erected at Spaardam (§ 3) will probably cost, with the buildings and hydraulic machinery - -	240,000
It is quite uncertain how many days this steam engine must be worked during the draining of the Haarlem lake, but, as nearly as can be conjectured, these costs will not exceed -	25,600
The sluice to be made at Spaardam is rated at - -	85,000
Total - - - - - - -	705,000

(or $282,000, a dollar being nearly 2½ florins.)

Such will be the approximate costs of the works intended to secure Rynland.

B. The works for facilitating the navigation (§ 4) have been rated at Fl.300,000, ($120,000.) Hitherto, only Fl.50,000 ($20,200) have been expended, viz: Fl.38,600 for a road along Zuider and Noveder, Spaarne, and Fl.11,900 for 16 wooden bridges, necessary for the passage of the track horses.

C. The costs of such parts of the dike and surrounding canal as are completed amount to - - -	Fl.1,114,200
What remains to be made may be rated at - - -	450,000
The present communications between the lake and the adjacent waters must be left open till the dike, canal, and all the works for Rynland navigation, are finished. The subsequent filling up of such channels will cost nearly - - -	175,000
For covering the dike with sods, and other items, the costs may be rated at - - - - - - - -	110,800
Total of the costs for the dike and surrounding canal -	1,850,000

($740,000.)

D. The digging of the ditches after the draining, (verkavelinger § 11,) and the other operations necessary to make the lands fit for cultivation, may be estimated at Fl.2,000,000, ($800,000.)

E. It has been found necessary for the carrying on of these works to appropriate some lands not belonging to the Governments, the costs of which cannot yet be fixed, but it is presumed that they will be about Fl.500,000, ($200,000.)

F. It is well known that Amsterdam can be defended against the most formidable enemy by inundations of the surrounding lands, by which, in 1672, the Republic was enabled to withstand the formidable attack of Louis XIV. The draining of the Haarlem lake would, it was feared, have rendered Amsterdam less capable of defence in case of war; but, to obviate this objection, it is proposed to substitute such works as will make the inundation of the surrounding country even more easy and effective. The costs of these proposed works are calculated at Fl.300,000, ($120,000.) It may be interesting and instructive to enter into a more detailed estimate of the costs for working the steam engines and discharging the water, as it has been a question much debated in Holland, whether steam engines or wind mills would be the least expensive in the draining of lands, many Dutch engineers being even now in favor of the latter.

Six single acting pumping steam engines, of 200 horse power each, constructed on the Cornish principle, are intended to be employed, (§ 8.) By the experiments and observations which have long been made by others, and more recently by some members of the committee for Haarlem lake, sent to England for that purpose by the Dutch Government, it is ascertained that the quantity of fuel for such steam engines per horse power does not exceed 2½ pounds of good coal per hour. The price of these coals delivered on the spot is, in Holland, Fl.65 the 1,000 pounds.

According to the estimate of 9.9, the lake will be emptied in 14 months of 350 days by the proposed steam power. The costs of coals will therefore be $\frac{1200}{1000} \times 24 \times 350 \times 2\frac{1}{2} \times 6.5 =$

therefore be $\frac{1200}{1000} \times 24 \times 350 \times 2\frac{1}{2} \times 6.5 =$ - - -		Fl.163,800
For tallow, oil, hemp, cost may be calculated at Fl.40 per week and steam engine; consequently, for 6 engines in 14 months		14,640
Persons to be employed per engine and year:		
1 engineer - - - - - -	Fl.1,500	
4 firemen - - - - - -	2,000	
3 assistants - - - - - -	1,000	
Total - - - - - -	4,500	
Consequently, for 6 engines in 14 months - - -		31,500
The price of each steam engine with boilers may be rated at - - - - - -	$70,000	
And the engine house and hydraulic machinery, at -	150,000	
	220,000	
Which makes, for 6 engines - - - - -		1,320,000
Cost of repair, Fl.5,000 per engine per annum—thus, for 6 engines in 14 months - - - - - -		35,000
Total - - - - - - -		1,564,940

or nearly Fl.1,565,000, ($626,000.)

Recapitulation of costs.

Security of Rynland - - - -	Fl.705,000,	($282,000)
Navigation - - - - - -	300,000,	(120,000)
Dike and surrounding canal - - -	1,850,000,	(740,000)
Digging of ditches, cost - - - -	2,000,000,	(800,000)
Purchase of land - - - - -	500,000,	(200,000)
Defence of Amsterdam - - - -	300,000,	(120,000)
Steam engines and water pumping - -	1,565,000,	(626,000)
To be added, for repair of dike, cost during the draining, overseers of the works, and incidental expenses - - - - - -	280,000,	(112,000)
Total cost - - - -	7,500,000,	(3,000,000)

With the foregoing estimate of costs, let us now compare the costs of draining by wind mills.

According to general practice, one wind mill is required for every 1,250 acres, and 5 feet lift, (note 8.) The lake of Haarlem contains 44,480, acres, and its waters must be raised 16 feet for annual draining, (9.8.) If, therefore, it were to be drained by wind mills, the requisite number would be $44.\frac{480}{1250} \times \frac{16}{5} = 114$.

It has been proved by many experiments that scoop wheels and Archimedean screws are the best hydraulic engines at present known, whenever wind mills are to be used. In the present instance, screws would be most appropriate, as by them the water may be raised 16 feet at two lifts, whereas scoop wheels would require three lifts. If, therefore, the lake were to be drained by wind mills, half only of the intended number would be used in the beginning (57 upper wind mills, *boveri molens*) till half the lake were emptied. Arrived at this point, the 57 under wind mills (*onder molens*) would be used to raise the inferior waters to a *low* or *intermedial* basin, whence they would be lifted by the upper wind mills, in order to be discharged into the surrounding canal; consequently, half the contents of the lake would be lifted by the 57 upper mills to the average height of 3¼ feet, (10.) The remaining waters would be lifted by the 57 under mills to the same average height of 3¼ feet; but as these under mills would discharge the water into the low basin, whence it would be lifted again by the 57 upper mills to the constant height of 6½ feet, we have to calculate the time required to empty the lake by 114 wind mills, as if the water of the first half were to be raised 3¼ feet, and the water of the other half 6½ feet, by 57 wind mills.

The lake contains 25,188,134,400 cubic feet, (§ 9.) Half this mass to be raised 3¼ feet is = 40,930,718,400 cubic feet to be raised 1 foot. This may be done by 57 wind mills in 18 months, supposing the same quantity of rain and filtration water as before, namely, 2 inches per month, (§ 9,) which must be lifted at the same time. Two inches on the surface of the lake (1,937,548,800 square feet) make 322,924,800 cubic feet; therefore, in 18 months, 5,812,646,400 cubic feet to be raised 3¼ feet, or 18,891,100,800 cubic feet to be raised 1 foot. This quantity, added to the first half of the lake, forms a mass of 59,821,819,200 cubic feet to be lifted 1 foot.

The average performance of a wind mill in a month being 57,935,000 cubic feet of water lifted 1 foot, (note 8,) the effect of 57 wind mills in 18 months will be 57 × 57,935,000 × 18 = 59,441,310,000 cubic feet raised 1 foot, which quantity is nearly equal to the mass to be raised.

The other half of the lake's contents to be raised 6½ feet forms a mass equal to 81,861,436,800 cubic feet to be raised 1 foot. Allowing always 2 inches from rain and filtration, the 57 wind mills will raise this mass, together with the rain and filtration, in 68 months. The effect, namely, of these wind mills in 68 months, is equal to 224,556,060,000 cubic feet of water raised 1 foot. The 2 inches of rain and filtration make, in 68 months, a quantity of 21,958,886,400 cubic feet to be raised 6½ feet, or 142,732,761,600 cubic feet to be raised 1 foot, which, with the water of the last half of the lake, makes a mass of 224,594,198,400 cubic feet, nearly equal to the computed effect of the mills.

With the supposed quantity of rain and filtration, the draining of Haarlem lake with 114 wind mills would therefore require 68 × 18 = 86 months,

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(10) The whole depth of the lake being 13 feet, (§ 9) the superior waters are to be lifted from 0 to 6½ feet; therefore, to the mean height of 3¼ feet.

or more than 7 years. This period, long as it may appear, is nevertheless not longer than has been required in some cases of draining land by wind mills. But, to give the most evident proofs of the advantage of draining with steam power, we will take the ordinary cases for wind mills, and compare the results with the unfavorable suppositions already made in the case of the steam engines.

According to the remarks in note 9, the ordinary quantity of rain and filtration may be rated at 15 inches, or 1¼ inch per month. This supposition will reduce the time for draining the first half of the lake to 15½ months, and for draining the other half to 41 months, making, in all, 56½ months. The 1¼ inch makes, in 15½ months, on the surface of the lake, 3,128,334,000 cubic feet to be lifted 3¼ feet, or 10,167,085,500 cubic feet to be raised 1 foot; and if to this we add half the contents of the lake, the whole mass will become 51,097,803,900 cubic feet to be lifted 1 foot. The 57 wind mills would raise to that height 51,185,572,500 cubic feet in 15½ months. In 41 months the 1¼ inch of rain and filtration per month makes 8,274,948,000 cubic feet to be raised 6½ feet, or 51,787,162,000 cubic feet to be raised 1 foot; to which, if we add the mass of water still remaining in the lake, the quantity will be 135,648,598,800 cubic feet to be raised 1 foot. The performance of the 57 wind mills in 41 months is 135,394,095,000 cubic feet of water raised 1 foot, and therefore nearly equal to the mass to be lifted.

Founding an estimate on the last supposition, the costs of emptying the lake by wind mills may be thus computed:

Construction of 57 upper wind mills, at fl.26,000 each	Fl.1,482,000
Repair of the mills and the salary of the millers, at fl.750 a year per mill; thus, for 57 mills in 56½ months	201,281
Construction of 57 under wind mills	1,482,000
Repair of mills and salary of the millers in 41 months	146,062
	3,331,343

Amounting in all to about	Fl.3,331,000	$1,332,400
The application of steam power would cost, as has been estimated	1,565,000	626,000
Difference in favor of the steam	Fl.1,766,000	$706,400

Great as this difference may appear, it must still be augmented by more than fl.100,000 for the difference of the interest, making, in favor of the use of steam, a profit of nearly fl.2,800,000 ($1,120,000.)

For the annual draining, one engineer will be employed for each pair of steam engines, making, in all, three engineers, at a salary of fl.1,200 each. Three firemen and two assistants will suffice for each engine. The salaries of the firemen are rated at fl.300, and of the assistants, fl.150 each. The necessary fuel per horse power and hour is rated at 3 pounds of coals, instead of 2½ pounds, as there will be more frequent interruption.

As 68 (9.10) is the computed average number of working days for the annual draining, the costs may be thus calculated:

Fuel $\frac{3\times24\times68\times1{,}200\times6\frac{1}{2}}{1{,}000}$ (6.13) - - -	fl.39,394 (11)
Tallow, oil, hemp, cost fl.400 per steam engine - -	2,400
3 engineers - - - - - - -	3,600
18 firemen - - - - - - - -	5,400
12 assistants - - - - - - -	1,800
Repair fl2,500 per steam engine - - - - -	15,000
Total - - - - -	67,594

or nearly fl. 68,000 ($27,200.)

The application of wind mills would cost annually—

Repair of mills and salary of the millers, fl.650 per mill, for 114 wind mills, fl.74,100 ($29,640.)

The annual costs of draining by steam, even on the most disadvantageous terms, will be fl.6,000 ($2,400) less than the cost would be, if the Haarlem lake were to be drained by wind mills.

The important duty of preserving and repairing the dikes, guarding against the danger of eruptions, and regulating the water levels, is confided to a peculiar organization, called the *water staat*, a corps of engineers possessing much knowledge of hydraulics and practical skill in matters appertaining to their profession.

The winter being the season of greatest danger, the officers of the water staat are, during that period, stationed along the dikes, and furnished with the means of strengthening them whenever there is reason to fear they may yield to the furious onslaught of the waves.

A concurrence of adverse circumstances may at any time cause the destruction of an entire province, and even threaten the very existence of the kingdom. If the prevalence of southwest winds, forcing the waters of the Atlantic round the north of Scotland towards the German ocean, should be suddenly followed by hurricanes from the northwest, (which often takes place in the winter,) the sea will be driven violently southward through the British channel; but this body of water, greatly augmented and piled up as it were, by the causes already mentioned, cannot find a ready outlet through the narrow straits of Dover, and is in consequence thrown back on the coast of Holland. If this should happen at or near the period of high tide, the danger becomes imminent; the alarm bell is sounded, and the *levy en mass* of the population takes place as if to repel a hostile invader. If the tides should continue to rise much above their usual altitude, the top of the dike is raised with such materials as may be at hand, if its surface is abraded, mats previously prepared for the purpose, of straw, rushes, or willow twigs, and even sail cloth, are laid on the outside, to prevent the washing of the banks and to stop the leaks. But if the enemy still gathers strength, and the defences are obviously too weak to resist the assault much longer, a semicircular bulwark (enclosing the yielding front) is hastily thrown up in the rear, to present a new barrier to further encroachments. If the outer rampart should be carried, the temporary dike cannot be expected to hold out for any great length of time, and the only hope of escape is to be looked for in the falling of the tide and the abatement of the storm.

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(11) It has been remarked in note 9, that the probable average number of working days will be less than 42. Taking this number, the cost for fuel might be reduced to fl.24,332, and consequently the total costs to less than fl.53,000, ($21,200.)

Notwithstanding the numerous precautions observed to avoid inundations, the wind and waves have often triumphed over the efforts of genius and science; prostrated the barriers which the labor of man had in vain erected to stay their course, and swept madly over whole provinces, as with the besom of destruction, involving the hapless population in one common ruin. Such accidents unfortunately have not been of rare occurrence. Nearly the whole of what is now called the Zuider Zee, covering a surface of 1,200 square miles, was dry land, and habitable, down to the latter part of the 13th century; such was also the case with the land now covered by Haarlem lake, which was formed by a sweeping irruption of the waters, towards the close of the 16th century. In 1421, Dort was separated from the main, and is to this day an island. In this neighborhood may still be seen the traces and the evidence of that terrible catastrophe. It is said that upwards of seventy villages and 100,000 people were destroyed by this inundation; and the country has never recovered its former condition. The ravages of the deluge are most conspicuous to the southwest of Dort, where an extensive tract of land called the Biesboschis is now a marsh, unfit for any agricultural purpose.

Of all the provinces of Holland, Friesland seems to have been the greatest sufferer. Murray, for the purpose of showing the uncertain tenure by which the Dutch hold their lands, makes the following extract from "Gauthier's Voyageurs dans les Pays Bas," a book which I have not had an opportunity to consult.

"Friesland was inundated in 533, 792, 806, 839, 1164, 1170, 1210, 1221, 1230, 1237, (this year the island Vlieland or Lakeland was formed,) 1248, 1249, 1250, (the consequence of this inundation was a pestilence, which destroyed several thousand persons,) 1277, (this year the gulf of Dollart was formed.) In 1287, the Zuider Zee assumed its present extent and shape, and 80,000 persons lost their lives in the inundation, 1336, 1400, 1421, 1429, 1516, 1524, (three inundations in this year,) 1530, 1532, 1559, 1570. On November 1st, (1570,) an inundation occurred which covered even the heights called Wieren, and cut off 100,000 persons, 30,000 of whom were Frieslanders. From this year, the inundations are less frequent; as an improved method of constructing the dikes was then introduced by the Spanish Governor, Robles, who at the same time passed a law that they should be kept up by the owners of the lands. Those recorded since 1570 were in 1610, 1675, 1717, 1776, and February 5, 1825."

If an unusual rise of the ocean waters or of the Zuider Zee should take place soon after long-continued rains, or at the time of ice floods in the rivers, following severe winters, the most disastrous consequences are likely to ensue from the rivers breaking through their artificial banks, and overflowing the surrounding country. Such an event happened in the spring of 1809. The preceding winter had been remarkably cold, and ice had been formed of extraordinary thickness. Almost the same time that the thaw occurred on the upper Rhine, a furious gale from the northwest elevated the surface of the Zuider Zee some feet above the highest spring tides. The immediate effect of this was of course to dam up the interior waters, and the destruction of the river dikes followed. The loss of life and property by this casualty was enormous.

In the winter of 1825, Amsterdam itself was threatened with a similar calamity; and it is said that if the tide had continued to rise for fifteen minutes longer, on the 5th of February of that year, this proud and rich city, with its 200,000 inhabitants, would probably have been overwhelmed and swallowed up by the waters of the Zuider Zee. As is was, the city suffered great pecuniary loss.

The kingdom of Holland is intersected in all directions with canals, which are in fact the highways of this country, all heavy burdens being transported by water, and the roads, of which there are but few in comparison, serving for light carriages. These roads commonly run along the margins of the canals, often occupying the embankments on which the canals are built.

They are paved with small clinker bricks, set up on edge close together, and are almost as smooth as a floor.

As has been said before, the canals are often elevated above the level of the surrounding country, and serve as recipients of the down fall water of the polders which is pumped up into them. They are usually sixty feet broad at the water line, and six feet deep, and are nearly level throughout. Wherever it has been found necessary to construct locks or sluices (and they are generally combined) the foundations always rest on platforms sustained by numerous piles, as it would be manifestly impracticable to build in any other manner, owing to the soft and pulpy nature of the ground.

The ship canals, or those intended for the accommodation of the foreign trade, are of much larger dimensions than those above mentioned, which are calculated only for domestic commerce, and to connect together all the more important towns and villages of the country.

The great north of Holland canal, the Vovern canal, and the canal of Ratwijk, are of the largest size, and demand a more particular description.

The natural approach to Amsterdam from the German ocean is through the Zuider Zee, by a tedious and dangerous navigation among the narrow channels, sand banks, and shoals, with which that gulf abounds. Ships were formerly detained by these obstructions and by contrary winds some times for weeks in making the voyage between the Texel and Amsterdam. And large vessels were compelled to tranship a portion of their cargoes, and to resort to the use of camels, in order that they might pass the bar at the mouth of the river Y.

To avoid all these difficulties,* the north of Holland canal was constructed. It was begun in 1819, and finished in 1825, at a cost of more than $4,000,000. It commences on the Y, opposite Amsterdam, and, after traversing the whole length of the peninsula of North Holland, (a low, marshy, barren region,) terminates at the port of Nieuve Diep, a large artificial harbor formed by means of projecting jettees, built of earth, fascines, and stones. This harbor is intended to afford protection to vessels navigating the Great canal and to the Dutch navy, of which it is the principal depot and dock yard.

The entrance sluice of this canal is situated on the river Y, opposite the city of Amsterdam, and is of the following dimensions:

Depth of the gates above the sills, 22.2 feet—A. P.
Width of the gates in the clear, 50.9 feet.
Length of the whole lock, 297.4 feet.
Length of the lock between the gates, 214.0 feet.

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* It may be well worthy of consideration, whether the same means may not be resorted to with advantage, to avoid the bars at the mouth of the Mississippi, which at present interpose such serious obstacles to the navigation of the river and to the commerce of New Orleans.

The usual high water at Amsterdam.—A. P.[†]

The usual height of the water in Waterland, 3.7 feet.—A. P.[‡]

Therefore, when a vessel passes through the sluice at high water, it sinks to a level of 3.7 feet below A. P.

About one and a half English miles from the entrance of the canal is the village Burksloot, where the canal passes through the sea dike by means of a sluice with double flood gates, and of the following dimensions:

Depth, 22.2 feet—A. P.
Width, 50.9 feet.
The whole length of the lock, 79.7 feet.

After passing the sluice at Burksloot, you enter Waterland, where the level of the canal is 3.7 feet lower than between Burksloot and the entrance. This height of the water is continued to Purmerend, a distance of about nine miles, (English.)

At Purmerend is another sluice, of the following dimensions:

Width, 50.9 feet.
Depth, 22.2 feet.
The length of the whole lock, 263.0 feet.
The length of the lock between the gates, 214.6 feet.

After passing through this sluice, you enter the North Holland bœrem or level, is 1 foot 7 inches higher than the canal between Burksloot and Purmerend, and so below A. P. 2 feet.

Near thirty miles from Purmerend, and fifteen miles from Alkmaar, the North Holland canal passes through the Zype sea dike, (which protects this part of the country from the inroads of the North sea,) by means of a sluice, separating this part of the canal from the waters of the Koegras, and of the naval arsenal at the Nieuve Diep, which are generally at the same level with the water of the canal.

This sluice consists of two separate single sluices, joined in such a manner as to form a lock sluice. Both of these sluices are of the following dimensions:

Width, 50 feet 9 inches.
Depth on the gate sills, 22 feet—A. P.
Length of the whole lock, 80 feet 5 inches.

Immediately on passing this last sluice, you enter the Koegras canal leading to the naval arsenal, (Nieuve Diep,) a distance of full seven miles.

To carry merchantmen out of the canal into the Niueve Diep, there is a sluice which is only 45 feet 6 inches wide between the gates, which not being sufficient for large size merchants ships and men-of-war, these ships pass through the sluice belonging to the dock yard, and so enter the harbor of the Nieuve Diep.

The whole length of the canal is 52 English miles. It is 30 feet wide at bottom, 111 feet at the surface line, and 18 feet 6 inches deep in reference to the usual water mark.

The locks and sluices on this canal (and indeed the most of buildings in

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[†] Amsterdam Peil, (Amsterdam mark, A. P.,) an assumed point by which the height of the water all over Holland is calculated.—See page 234.

[‡] Waterland, a district of North Holland; that part of the canal which is locked up between the sluices at Burksloot and at Purmerend is known by the appellation of *Bœrem of Waterland*, and differs in level from the other parts of the canal, as is shown in the text.

Holland) are erected on piles.* Models of these works have been made on very large scales, and with extraordinary exactness and minuteness, exhibiting each individual portion of the structure and the precise position of each pile.

In case of failure, or of a threatened giving away of any part of these works, the models are consulted, for the purpose of ascertaining what portion of the structure may need repair. These models are preserved in the office of the water staat at Amsterdam, and are well worthy a careful inspection, as they give a much better idea of the plan of these buildings than any drawings or written description can convey.

Great canal through the Island of Voome, in the province of South Holland.

For large merchantmen, the navigation from Rotterdam to the sea was attended with many difficulties, arising partly from the strong currents and contrary winds, and partly from the shallowness of water on the bar at the mouth of the Maas, below Brielle; in consequence of which, it often became necessary to break bulk and resort to lighters, by which much valuable time was lost, amounting often to several weeks; or else to pursue the southern and circuitous route, by the way of Dort and Helvoetsluis, which offers, at all times, a sufficient depth of water for the very largest ships. For the purpose of avoiding this necessary *detour*, a canal has been dug through the isle of Voome, opening a regular and direct communication between Rotterdam and Helvoetsluis through which East Indiamen, and first rate frigates may reach the former port in a single day from the mouth of the Maas.

This canal passes in a straight line through the Isle of Voome, beginning on the river Maas, between the villages of Heenvliet and Zuartewaal, and ending in the Harengvliet, near Helvoetsluis, where it forms a small angle.

At both the extremities of the canal are sluices or guard locks; the water in the canal (usual height) being upon a level with low water at Helvoetsluis, or in the Haringvliet, which is 3 feet A. P. These sluices or locks are also provided with contrivances, by which the flood tide may be used in cleaning out the canal.

Both sluices are nearly of the same construction and dimensions; that at the Maas extremity has a drawbridge over it. Each of the sluices or rather guard locks consists of two separate sluices, having each two flood and two ebb gates, by means of which vessels can always pass, whether the water in the lock be higher or lower than without.

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* The houses in Rotterdam and Amsterdam, being all founded on piles, (which are not always driven into the firm soil,) present a very curious appearance. As but few of them have retained a vertical position, in consequence of the unequal compression of their foundation, the result is, that they lean in all directions, and a rigid police is observed, to prevent accident. In New Orleans, where large platforms, made of different layers of inch thick boards, projecting some distance beyond the sills of the houses, are resorted to, no difficulty is found in procuring foundations for even the largest structures, such as the late St. Charles Theatre and the St. Charles Exchange Hotel.

In 1822 the large corn exchange or warehouse in Amsterdam actually disappeared bodily, in the mud, in consequence of the piles giving away. This house, at the time of the accident, contained upwards of 70,000 cwt. of grain. All heavy burdens in that city are transported on sledges, for fear the rolling of heavy wheels may disturb the foundations of the houses. Many of the hackney coaches are of the same construction, and the runners are greased, to make them run the smoother. The driver generally carries in one hand a rag dipped in oil, and fastened to a string, which he contrives to throw occasionally underneath the runners, to diminish the friction.

The usual height of the water in the canal is upon a level with the low water at Helvoetsluis; the whole, however, is so regulated that at every flood, water may be let into the canal, and, if required, during the whole of the flood tide.

The difference of the water's height between ebb and flood tide is six feet, and, with this difference, the usual height of the water in the canal may every flood be wholly or partly increased.

In the outer ebb gates of each sluice are port holes, for the purpose of drawing off the water of the canal when it becomes necessary to diminish its depth.

There are four floating bridges in the canal, so constructed as to allow vessels to pass at any height of the water, and causing no stoppage to carriages.

The dimensions of the canal at its usual height, which is the low water mark at Helvoetsluis, are as follows:

Width of the sluices, 45 feet 6 inches.
Depth on the gate sills, 17 feet 3 inches, at low water.

Each guard lock sluice, as stated before, consists of two sluices, each of which are in length (for the whole lock) of 106 feet;

The inner and outer single sluices are at a distance from each other of 130 feet;
The lock between the gates 236 feet;
The floating bridges open 48 feet;
The depth of the canal below low water 16.4 feet;
Breadth at the bottom 35.9 feet;
Breadth at the surface (low-water depth) 110.6 feet.

The whole length of the canal, which has dikes on both sides, is about six miles (English.)

The canal is provided with a towing path on each side, 13 feet wide, for the purpose of tracking vessels through the canal.

The surplus waters of the adjacent lands are drawn off through four self-acting sluice gates of ten feet openings, fitted up with vaune gates, which close spontaneously when the water of the canal is at a higher level than the ditches. Water wiers have also been constructed through the lateral dikes, for the purpose of irrigating the meadows in seasons of protracted droughts.

This work was begun in the year 1827, and finished in 1830.

The Rhine, after descending into Holland, throws off various branches to seek the ocean, as the Waal, the Linghe, the Leck, the Issel, &c., many of them important rivers, while the most insignificant of them all is the only one retaining the original and time-honored name. It passes through Leyden, the Luydum Batavarium of the Romans, and is discharged into the German sea at Ratwijk, about seven miles from that town. The debouche of the Rhine on the coast was so blocked up by a barrier of drifted sand, thrown up by a violent tempest in 840, that the waters could only filter their way to the sea, and all navigation was of course stopped. The consequence was, that a large district of country was overflowed and converted into a sickly marsh. For the purpose of opening a new channel to discharge the waters of the river, and for the better drainage of the low grounds called Rynland, the canal of Ratwijk was constructed—a work, although of short extent, that may, from the boldness of its design, the success of its execution, and the difficulties encountered, be ranked among the grandest and most important of the hydraulic structures of which Holland is so justly proud.

The first projêt for this canal was suggested in 1404, but it was not till 1571 that a serious attempt was made to carry it into execution; but when commenced it was prosecuted with so much vigor that on the 1st of April of the following year, the last coffer dam having been cut and the sluices opened, (in the presence of the authorities and an immense crowd of bystanders,) the interior waters, which had been so long pent up, were seen to rush violently into the German ocean. In consequence, however, of the civil troubles and the foreign wars, the canal was interrupted before it had been entirely completed, and again disappeared beneath the drifting sands, where it remained buried till the year 1802; about which time this project was again agitated, and the execution of it finally ordered by the Legislature of the Batavian Republic in the month of May, 1804. The works begun in August, 1804, were finished in 1807, under the superintendence of Mr. Conrad, a distinguished French engineer.

The canal is about four miles long, forty-nine feet wide at bottom, fifty-two feet at surface, and six feet three inches in depth* (mean.)

The water is withheld by means of an inner and outer flood gate and a sluice bridge.

The outer flood gate, on the sea shore, has five sluices, of twelve feet six inches opening each, presenting thus to the flowing of the water a thoroughfare of sixty-two feet six inches. The length of the aperture walls, measured on the middle line, is sixty-three feet five inches. The sluice floors are seventeen feet three inches below the highest tides.

Each sluice is provided with a pair of tide gates, a strong flood gate, and a turning door, (porte toumante,) for clearing the sluice.

The tide gates (ports de flot) are not as high as the highest tides, but rest against a staying girder, above which the water is restrained by a heavy arch of brick work, against which the most furious tempests have beaten without effect.

At fourteen hundred and sixty-two feet six inches back from the first flood gate is the second flood gate, just within the dunes; this flood gate has three sluices each of eighteen feet opening; making, in all, a total width of fifty-four feet.

The length of aperture walls is ninety-six feet. The sluice floors are seventeen feet three inches below the highest tides.

A sluice bridge (port eclusé) provided with three sluices of twenty feet openings, arranged with floating doors, (portes flottantes,) can, if necessary, be used as a third withholder during extraordinary high tides.

The junction of the terminus of this work with the sea has been effected by means of jettees formed of fascines, secured in position by piles driven into the sands, on which heavy masonry has been laid.

The fascines prevent the underwash, and the masonry formed of huge stones, or rather rocks, is sufficiently strong to resist the force of the waves. These piers are six hundred and twenty-five feet long, leaving between them a basin three hundred and twenty feet wide.

The difference in level between the inner water and the ebb tide being usually only about sixteen inches, it was feared in the beginning of the undertaking that the outer channel would be liable to fill up with sand; to prevent which, by creating a greater scour, a steam engine was established, with the view of raising the water within the gates to a higher than its natural level.

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* Since the commencement of the drainage of the lake of Haarlem, the dimensions of the canal have been greatly increased.—See page 236.

Time, however, having shown that the flowing out of the water at low tides was sufficient to keep the basin from the accretion of shingle, the engine was sold many years ago. When the flood commences, the gates of which we have spoken are closed, to prevent the entrance of the sea. At extraordinary high tides the exterior water rises about seventeen feet, pressing against the gates, and is several feet above the inner waters.

When the tide is on the ebb, the gates are opened by means of machinery, and the accumulated waters, which had been withheld during the flood, are allowed to flow out, carrying with them the sand which may have been brought in by the rising tides. The water discharged by the sluices has been estimated at one hundred thousand cubic feet per second; but when strong western winds prevail, and the tides do not subside to their ordinary level, it is impossible to open the gates, and no discharge can take place.

I have embraced in this paper the following cross section and specification of the mode of preparing foundations for railroads in Holland, where the nature of the ground may require it, as I believe it may be used to great advantage in many situations in the United States.

Dutch railway from Amsterdam to Utrecht.

Description of the fascine causeway, or foundation of the embankment, at places where the ground is soft and pulpy.—The fascine foundation (*rys* bedding) is to be formed by an under and upper framework of hurdles (*wiepen, saucisson*) $\frac{4}{10}$ of a metre thick with a packing of fascines (*rys bossen*) between them. Including the second layer of hurdles of the under frame, as hereinafter described, and the first layer of hurdles of the upper frame, the mean depth of the packing ought to be half a metre, equal to 1 foot 7½ inches in English. The hurdles to be of a uniform texture, of straight sticks, strongly connected together by no less than eight twig bindings of every metre in length. The hurdles of the first layer of the under frame to be placed lengthwise, in the direction of the axis of the way, one metre apart between the centres; and those of the second layer placed at right angles across the first, also one metre apart. The cross hurdles to be of a uniform texture, and the joints in the lengthwise hurdles to be placed checkerwise, or to break joints. The hurdles of both layers to be tied together, at every crossing, by strong twig bindings. Upon the under frame, which must be well filled up with sand to the level of the upper side of the hurdles, are to be laid down the first course of fascines; then two transverse layers, crossing the first at right angles; and upon this a fourth layer, like the first, at right angles across the axis of the way, but having the big ends of the fascines turned to the other side. In this, as in the other layers, the fascines are to be laid down in such a manner that the big end of the one outreaches one metre the big end of the fascine lying underneath. They are to be well rammed together, so as to allow no room between them. Finally, the fascine packing must be so arranged as to give it a depth in the middle of $\frac{6}{10}$ of a metre, (2 feet,) and at the sides of $\frac{4}{10}$ of a metre, (1.4,) and must be made as will be directed by the engineer.

The upper frame of the same construction as the under frame; to be placed exactly vertically above it, and so that the under layer of hurdles, which falls in the fourth layer of fascines, is at right angles across, and the upper hurdles in the same direction as the axis or centre line of the way.

Through each crossing, and between two succeeding intersections, stakes (*piquets*) are also to be driven, passing also through the hurdle of the under frame. Finally, between each of the lengthwise hurdles, and parallel to them, to be twisted upon stakes, $\frac{3}{10}$ or $\frac{4}{10}$ of a metre apart, a weft or tangle (*tuin*) of hoop wood, which, after being well pushed down, remains $\frac{15}{100}$ of a metre above the fascine packing.

When fascine foundations are thus finished, they must be filled up with sand precisely to the level of the upper side of the hurdles or tangles, so as to leave no room or spaces between the fascines. The further construction of the embankment will be done with their coats of earth spread as may be directed.

If at some places it may be thought requisite to give the fascine foundation more depth, there will be placed upon the above-described substructure, of the mean depth of half a metre, further layers of fascines, one across another, and filled up with sand, but without further frame works; while at places where a less depth is sufficient a single layer of fascines will be laid down, instead of the two transverse middle layers; and instead of frame works, a single row of hurdles may be used, according to the nature of the ground and of the local circumstances.

Description of the materials.

Fascines (*rys bossen*) to be made of sound and clean willow wood, of not less than three years' growth, or of oak brush wood, of not less than five or six years' growth; the wood to be straight, and cut green in the last season, to be firmly bound by two bindings, and well tightened. The length of the fascines to be 3½ to 4½ metres, the big end being half a metre in circumference.

Hoopwood (*guardem*) of straight and flexible water willow, not less than 2 metres long, and 0.055 to 0.085 of a metre thick.

Stakes (*palen*) to be $1\frac{3}{10}$ metre long, and, in the middle, of $\frac{1}{10}$ of a metre in circumference.

Hurdles (*wiepen, saucissons*) $\frac{4}{10}$ of a metre in circumference, made of the biggest and straightest sticks out of the fascines, well tightened and bound together.

I have the honor to be, Colonel, your obedient servant,

GEORGE W. HUGHES,
Captain Topographical Engineers.

Col. J. J. Abert,
Chief Topographical Engineer.

Note.—The metre, or Dutch ell, is 39½ inches English, nearly.

No. 8.

REPORT OF THE COLONEL OF ORDNANCE.

ORDNANCE OFFICE,
Washington, November 1, 1843.

SIR: In obedience to your directions, I have the honor to submit a report of the operations of the Ordnance department during the last three quarters of the year ended June 30, 1843; my last report having embraced the concerns of the department to the 30th September, 1842.

Funds.

The amount of money available for the service of the Ordnance department on the 30th of September, 1842, was as follows:

Undrawn from the Treasury - - - -	$1,018,208	12
In the hands of disbursing officers - - - -	40,525	98
	1,058,734	10
Received from sales, rents, &c. - - - - -	33,607	72
Appropriations for the fiscal year ending June 30, 1844 -	989,405	00
	2,081,746	82
Expended during the three quarters ended June 30, 1843, including $84,000 turned over to the quartermaster's department, and $15,003 from the sales of unserviceable arms, turned into the Treasury - - - - -	$721,741	69
In the hands of disbursing officers 30th June, 1843 -	71,914	81
Undrawn from the Treasury - - - - -	1,288,090	32
	2,081,746	82

The disbursing officers of this department have all promptly and accurately accounted for the moneys placed in their hands.

1. *Armament of fortifications.*

The expenditures under this head, for the three quarters of the fiscal year ended June 30, 1843, amounted to $84,337 23. The principal articles procured by this expenditure are as follows:

11	32-pounder guns.	
8	10-inch	Sea coast howitzers.
1	8-inch	
1	13-inch	Sea coast mortars.
1	12-inch	
5	10-inch	
10	10-inch	Siege and garrison mortars.
20	8-inch	

1	42-pounder	Casemate carriages.
20	32-pounder	
1	32-pounder	Barbette carriages.
2	24-pounder	
6	18-pounder	
2	10-inch	Sea coast howitzer carriages.
9	8-inch	
1	10-inch mortar bed.	
9,036	42-pounder	Cannon balls.
2,727	32-pounder	
43,556	cubic feet of timber.	
54,520	pounds of bar iron.	

Sound policy requires that the necessary measures be continued for arming the fortifications as their construction advances, and that materials, not of a perishable nature, and such as require time to prepare them for use, should be provided in advance. A full supply of timber for gun carriages should be furnished at the arsenals of construction, to prevent the necessity of procuring it on a sudden emergency, as under such circumstances it can seldom, if ever, be found of proper quality. The proportions and forms of garrison and sea-coast artillery have been determined, and the regulations in force are calculated to secure their being fabricated of the proper *quality*.

The importance of a national foundry is a subject on which the views of this department have repeatedly been given, and they remain unchanged. The want of such an establishment, by which (among many other advantages) standards of material and workmanship might be fixed, for the contract service of this branch of public supplies, has led to the adoption of a more strict supervision of the works of private foundries; a supervision so strict that *some* have objected to it as inquisitorial, and inconsistent with the private character of their works. This course, however, under the present mode of procuring cannon, is absolutely necessary to secure the interests of the Government in a matter involving such great cost, and on which our military efficiency so much depends.

2. *Purchase of ordnance and ordnance stores.*

The expenditures for these objects from the 30th of September, 1842, to the 30th of June, 1843, amount to $69,544 65, and the principal articles procured are as follows:

1	32-pounder gun, for the ballistic pendulum.	
4	12-pounder	Carriages.
25	6-pounder	
2	24-pounder	Howitzer carriages.
6	12-pounder	
200	32-pounder cannon balls.	
200	32-pounder shells.	
47,393	pounds of grape and canister shot.	
6,200	pounds of grape and canister shot plates.	
4	Jenks's carbines.	
5,000	sets infantry	Accoutrements.
500	sets rifle	
720	non-commissioned officers' sword belts.	
38,707	cubic feet of timber, for field carriages.	
26,124	pounds bar iron.	

3. The amount of the expenditures under the appropriation for the purchase of saltpetre and brimstone has been $38,023 64, which has been applied to purchasing and placing in store 480,294 pounds of refined saltpetre.

4. *National armories.*

The expenditures at the armories, from the 30th September, 1842, to the 30th June, 1843, have been as follows:

Object.	Harper's Ferry.	Springfield.	Total.
For the manufacture of arms, materials, and component parts of arms - - - -	$89,167 33	$63,349 55	$152,516 88
For repairs and improvements -	29,527 37	15,466 58	44,993 95
Total - - -	118,694 70	78,816 13	197,510 83

There have been manufactured at these armories, and delivered into store, during the same period, 7,705 muskets, 301 rifles, and 1,001 carbines; and progress has been made in the fabrication of parts of the percussion muskets, the expenses of which, and the providing of materials, are embraced in the above statement.

5. The accompanying statement (marked A) shows in detail the issue of ordnance and ordnance stores of every description, to the troops in the service of the United States, from the period embraced in the last report to the 30th June, 1843.

6. *Arming and equipping the militia.*

The expenditures for this object, from the period embraced in the last report to the 30th June, 1843, amount to $134,413 56, and the principal stores procured are as follows:

25	6-pounder bronze guns.
27	6-pounder carriages.
1,500	muskets.
2,100	rifles.
1,500	carbines.
3,750	pistols.
1,000	artillery swords.
2,000	artillery sword belts.
100	sabre belts.
235	pairs of holsters.

7. The apportionment of arms to the several States and Territories, under the act of 1808, is shown by the accompanying statement, (marked B,) and the supplies issued to the States and Territories between the 30th September, 1842, and 30th June, 1843, are as follows:

20	6-pounder bronze guns.
24	6-pounder carriages, with implements and equipments complete.
4	caissons, with implements and equipments complete.

8,440	muskets, complete.	
23	Hall's rifles.	
1,450	common rifles.	
50	Hall's carbines.	
460	pistols.	
370	cavalry sabres.	
1,810	artillery swords.	
3,790	sets infantry	Accoutrements.
50	sets rifle	
200	sets cavalry	
150	sabre	Belts.
1,810	artillery sword	
100	pairs holsters.	
100	Hall's rifle pouches and belts.	
50	Hall's rifle waist belts and plates.	
103	Hall's bayonet scabbards and belts.	
50	Hall's rifles flask and pouch belts.	
20	bayonets.	
12	sets artillery harness.	
402	percussion cannon locks.	

The *usual* distribution to the militia has been made this year, subsequent to the 30th of June, and includes many articles issued, which are not embraced in this statement.

8. *Arsenals and depôts.*

The expenditures under this head for three quarters ending 30th June 1843, have been $53,615 54, being drawn from a balance remaining from the appropriations of the previous year, which has been applied to continuing the constructions at the arsenals at Little Rock, in the State of Arkansas; Fayetteville, in the State of North Carolina; preparing for the construction of that at Charleston, South Carolina; and in repairing and improving those in other parts of the Union, by the addition of buildings necessary for the storage and preservation of the munitions of war provided for the future wants of the country. The inspection, which was commenced last year, of all the muskets deposited at the arsenals, for the purpose of classifying them according to quality, has been continued, but is not yet completed. Some of those falling into the 4th class, which embraces all made prior to 1812, and those of later fabric, which are very defective, have been sold, under the provisions of the law of Congress passed March 3, 1825.

9. *Ballistic pendulum.*

In the general appropriation for the service of this department in 1840, provision was made, in pursuance of an estimate from this office, for constructing a ballistic pendulum, for the purpose of prosecuting, with guns of large caliber, the experiments essential to the advancement of the science of gunnery, and of extending our knowledge of the principles which should govern in determining the proper proportions of length, weight, &c., in the construction of cannon; also, to ascertain the best mode of manufacturing gun powder for ordnance service, and to establish a certain and satisfactory method of proving the strength of such powder.

During the last year, the ballistic pendulum has been constructed at

Washington arsenal; and, in accordance with a programme approved at this office, a series of experiments on gunpowder has been commenced, which promises satisfactory results; but the experiments, requiring much time and care, have not yet been carried to the extent requisite for making a full report on the subjects to which they relate.

10. *Artillery drawings.*

In the preparation of detailed drawings of a uniform system of artillery much progress has been made, and the work is advancing towards completion. The drawings already finished, include, besides accoutrements for small arms, the heavy cannon and mortars for garrison and sea-coast service, and almost the entire system of field and siege artillery; embracing guns, carriages and caissons, travelling forges and battery wagons, with the various implements, equipments, and tools, requisite for field and siege trains. They consist of 140 sheets, and, with the different plans, elevations, and sections, comprise 2,269 distinct delineations. To complete the system, drawings of carriages and implements for casemate and barbette guns, and bomb cannon, and of mortar beds, remain to be executed.

The foregoing statements show the amount of expenditures intrusted to the officers of this department, with the product and disposition of the principal articles obtained. But, in addition to all this, it is the duty of this department to keep in repair the whole armament of the fortifications of the country, as well as the arms in the hands of the troops. It is, moreover, the grand depository of all that part of the military stores of the nation laid up, not less for the militia than for the regular army, and so apportioned among the arsenals and depots, in every quarter of the Union, as to meet at once the calls most likely to arise in any direction.

In these arsenals and depots every article undergoes a periodical examination, and is cleaned, oiled, lackered, or otherwise treated, so as to preserve it in the best condition for use; and at the end of every year a perfect inventory is forwarded to this office, which shows, not only what has been added within the year, but all that has been issued or otherwise disposed of, and every article remaining with its money value, at the lowest estimate of first cost and present condition.

The twenty-six inventories, prepared upon these principles, for the 30th June last, give an aggregate of the estimated values as follows:

Lands, magazines, store-houses, quarters, barracks, workshops, and machinery - - - - - -	$3,946,482 61
Artillery of every description, with carriages, equipments, and projectiles - - - - - - -	1,928,009 06
Small arms of every description, with their accoutrements	9,826,221 07
Ammunition, such as cartridges for cannon and small arms, powder not made up into cartridges, and materials for the fabrication of powder and cartridges - -	591,570 40
Component parts of artillery carriages, and of small arms and equipments, not assembled and put together so as to form the finished article - - - -	243,093 18
Unwrought materials and tools in the store houses -	559,612 58
Guns, carts, and implements and tools of every description, in the current service - - - - -	298,032 17
Making a total of - - - -	17,393,021 07

These inventories, condensed as they are into the smallest possible compass that will enable this office to detect mistakes, cover more than sixteen hundred (1,600) pages of paper, and being in addition to all the writing consequent upon keeping and rendering accounts and making other returns, renders the employment of professional clerks at many of the arsenals indispensable. I cannot omit, in this connexion, calling your attention to the very inadequate salaries now allowed by law to the clerks employed in this bureau—the chief clerk, in particular, not being allowed as much by several hundred dollars as the chief clerks of every other office having the supervision of accounts.

11. I come now to speak of the mineral lands of the United States, the supervision of which is assigned to this bureau, in addition to all the duties above mentioned. And,

1st. *Lead mines of the upper Mississippi.*

In the last annual report from this office, the history of the proceedings at these mines was brought up to the 15th of October, 1842. The following statement will show, at one view, the whole number of leases which have been granted since the renewal of the leasing operations:

State or Territory.	May 1, 1842, to Oct. 1, 1842.	Oct. 1, 1842, to Oct. 1, 1843.	Total.
In Illinois - - - - - - - -	171	501	672
In Wisconsin - - - - - - - -	170	171	341
In Iowa - - - - - - - - -	45	29	74
Total - - - - - - - - -	386	701	1,087
Of which, 63 were renewals of expired leases previously granted to the same parties, and 37 were to new parties, for tracts previously leased to others - - - - -			100
Leaving the actual number of tracts leased - - - - - - -			987

Only 271 of these lessees have made returns of the quantity of mineral raised by them, amounting, in the aggregate, to but 8,697,654 pounds. This quantity, at the average yield of 70 pounds of lead for every 100 pounds of mineral, has afforded these lessees 6,088,358 pounds of pure lead, on which the rent stipulated to be paid to the United States amounts to 365,301 pounds, while there have been actually paid but 178,052 pounds, leaving 187,249 pounds due on the 1st ultimo, even on the small quantity of mineral acknowledged to have been dug.

This statement, however, exhibits a very limited view of the mining operations of this region, as by far the largest quantity of mineral obtained from it is dug by persons claiming title to these lands, either on certificates of entry issued at the land offices contrary to instructions, and on which the patents are withheld, (as in Wisconsin,) or by those who claim upon the ordinary rules of pre-emption, but to whom certificates of entry are refused, (as in Illinois and Iowa;) for it appears, from the best data that can be obtained, that, for the last two or three years, not less than 35,000,000 pounds of lead have been sent from this region to St. Louis annually, exclusive of such as finds a market by way of the lakes.

The following statement will show, at one view, the amount of receipts and expenditures connected with these mines since the renewal of the attempt by the War Department, in May, 1841, to obtain rents from those who are working them.

	Pounds.		
Amount of money received on compromises of old balances, per last annual report		$1,808	14
Amount since received on same		416	98
Making		2,225	12
Quantity of lead received on old balances, per last annual report	49,901		
Quantity since received on same	30,352		
Quantity received on the new leases, as above stated	178,052		
Making	258,305		
Which, at 3 cents per pound, is		7,749	15
Total receipts, estimated as money		9,974	27
Expenditures since May, 1841, per bills actually paid, exclusive of expenses properly belonging to the Lake Superior agency		9,332	39
Balance in favor of the United States		641	88

A very considerable portion of these expenses has been paid as fees to counsel for defending the rights of the United States when brought into question before justices of the peace, and in the local courts, by suits for *forcible entry* and the like, brought against the lessees by persons claiming pre-emption rights, and in some few suits which the lessees themselves have been compelled to institute against the pre-emption claimants, to prevent them from interrupting the mining operations; and, as no rents at all could probably have been collected without these attempts to afford protection to the lessees, this employment of counsel has been tacitly approved. The many cases, however, in which this effort to afford protection has failed have been a principal, if not the only cause of the neglects and refusals to pay the rent. But as all the questions involved in these suits are believed to be embraced in that of the United States versus H. H. Gear, on which the United States circuit court for Illinois were divided in opinion, and so certified to the Supreme Court, and as a decision in that case is expected at the ensuing January term, it is hoped that a final stop will be put to these harassing petty suits, and that the receipt of rents for these mines will in consequence be greatly increased, while the expenses will be lessened.

2d. *Mines in the south part of Illinois, and in the State of Arkansas.*

Since the last annual report, the two permits therein referred to as having been granted for the mineral lands in the south part of Illinois have expired by their own limitation, and no leases or permits have been since granted for them, or for those in Arkansas, from the want of agents at those points to execute the leases and collect the rents; and no such agents have been appointed, from the belief that the expenses would exceed the proceeds of the rent.

It is respectfully recommended for your consideration, whether these lands had not better be returned to the jurisdiction of the General Land Office.

3d. *Mines on Lake Superior.*

Soon after the ratification, in February last, of the treaty with the Chippewa Indians, by which they ceded their lands on the south side of Lake Superior and the islands opposite, several applications were received, asking for leases of the mineral lands in that Territory, and many statements were made, both written and verbal, that these lands were very rich, not only in copper, but in lead and other ores, and that large parties of men were preparing at various points to go and to take possession of the mines therein.

It was under these circumstances, with a view not only to protect the property thus acquired, but to prevent a collision which it was feared would ensue between such unauthorized persons and the Indians, who by the terms of the treaty were allowed to remain till required by the President of the United States to remove, that it was suggested, and met your approval, to grant permits to the above-mentioned applicants, and such other responsible persons as might apply, authorizing them, for the term of one year, to examine for ores within that district, with a condition that such tracts as they might select within the year should, if they wished it, be leased to them or their assigns for the term of three years, at a certain stipulated rent, with a right of renewal, subject to the action of Congress. No tract to exceed three miles square, and no individual or company to select more than three such tracts, with an equal interval between them.

In order to carry out these views, Walter Cunningham, Esq., the special agent for the upper Mississippi mines, was commissioned by you to proceed with two assistants to this newly acquired country, and superintend the operations, with authority to grant permits of the same character to such other responsible and well-disposed persons as he might find there, It was afterwards determined to grant no more permits which would authorize the selection of more than one tract.

Five permits have been delivered from this office, with your signature, for three tracts each, and three for one tract each. No selections under them have yet been reported, nor has the agent, General Cunningham, reported the number that he has issued. His correspondence, however, shows that great interest has been awakened as to these mines; that large numbers of persons have visited that country since the issuing of the permits; that the copper ores are rich beyond example; and that the copper region is very extensive, embracing even Isle Royal, on the very confines of the United States towards the Canada line. A full report of his proceedings is expected, and will be communicated as soon as received.

G. TALCOTT,
Lieutenant Colonel Ordnance.

A.

Statement of ordnance and ordnance stores issued to the troops &c., in the service of the United States, from the 1st October, 1842, *until the* 30*th June*, 1843.

Class 1.

6	6-pounder brass guns.
2	12-pounder brass howitzers.
3	12-pounder mountain howitzers.
1	24-pounder iron gun.
2	12 do do.
14	6 do do.

Class 2.

2	12-pounder field carriages.
6	6-pounder field carriages, stock trail.
18	6-pounder field carriages, gribeauval.
2	12-pounder howitzer field carriages, stock trail.
3	12-pounder mountain howitzer carriages.
8	caissons.
1	travelling forge.
1	battery wagon.

Class 3.

11	cannon percussion locks.
82	sponges and rammers.
31	sponges and staves.
31	rammers and staves.
12	ladles and staves.
25	worms and staves.
4	ladles and worms.
99	sponges.
98	sponge covers.
61	sponge buckets.
28	tar buckets.
132	bricoles.
19	prolonges.
4	gunners' belts.
4	gunners' gimlets.
61	gunners' haversacks.
4	gunners' quadrants.
15	lead aprons.
61	linstocks.
76	portfire stocks.
29	portfire cases.
27	portfire clippers.
53	priming horns.
63	priming wires.
90	thumbstalls.
35	tarpaulings.
12	tompions and collars.
76	tube pouches and boxes.
11	fuse augers.
1	fuse extractor.
36	fuse mallets.
19	fuse rasps.
11	fuse saws.
11	fuse setters.
3	sets artillery harness for two horses.
2	artillery saddles.

Class 4.

2,400	42-pounder cannon balls.
2,400	32 do do.
3,700	24 do do.
200	12 do do.
4	12-pounder howitzer shells.

Class 5.

200	42-pounder canister shot.
200	32 do do.
200	24 do do.
200	42-pounder grape shot.
200	32 do do.
200	24 do do.
500	8-inch spherical case shot.
142	6-pounder strapped shot, fixed.
130	6-pounder canister shot, fixed.
98	12-pounder howitzer shells, fixed.
100	8-inch shells, strapped.

Class 6.

170	muskets.
591	rifles.
73	carbines.
4	pistols.
38	artillery officers' sabres.
38	infantry officers' swords.
61	sabres.
9	artillery swords.
123	non-commissioned officers' swords.
102	musicians' swords.

Class 7.

30	sets infantry accoutrements.
572	cartridge boxes.
440	cartridge box belts.
711	bayonet scabbards.
484	bayonet belts.
957	waist belts.
1,266	gun slings.
376	screw drivers.
470	wipers.
321	ball screws.
59	spring vices.
9	bullet moulds.
954	brushes and picks.
411	rifle pouches and belts.
411	rifle flasks.
50	carbine swivels.
44	pairs holsters and housings.
138	non-commissioned officers' sword belts.
159	artillery sword belts.
31	sabre belts.
594	cartridge box plates.

A—Continued.

2,228	belt plates, assorted.
30,945	flints.

Class 8.

20,111	lbs. cannon powder.
26	lbs. musket powder.
1,184	lbs. rifle powder.
100	lbs. mealed powder.
5,319	cannon cartridges.
117,900	musket ball cartridges.
27,120	musket ball and buckshot cartridges.
7,767	rifle ball cartridges.
39,000	carbine ball cartridges.
35,000	pistol ball cartridges.
139,083	blank cartridges.
893	fuses.
2,480	percussion primers for cannon.
73,000	percussion primers for small arms.
10,015	priming tubes, full.
737	portfires.
250	rockets.
180	lbs. slow match.
1,400	lbs. rifle bullets.
4,031	lbs. lead.
200	lbs. nitre.
200	lbs. sulphur.
40	lbs. laboratory paper.
14,995	cannon cartridge bags.
1,152	cannon wads.

Class 9.

341	hand spikes.
6	wheels, assorted.
396	pieces component parts of small arms.

Class 10.

1	gin.
2	gin blocks.
2	gin falls.
1	sling cart.
10	arm chests.
198	packing boxes.
10	ammunition kegs.
75	barrels.
25	brooms.
96	gallons coal tar.
26	oil cans.
621	pieces of tools, assorted.
200	yards flannel.
100	yards cloths, assorted.
69	pounds twine.
2	pounds thread.
80	pounds harness leather.
3	pounds emery.
1,630	pounds paints.
95	pounds whiting.
89	pounds putty.
236	gallons of oils, assorted.
51	gallons lacker.
4	gallons varnish.
75	gallons spirits turpentine.
95	pounds tallow.
245	pounds cut nails.
2,100	copper nails.
3,600	feet plank.

G. TALCOTT,
Lieutenant Colonel Ordnance.

Ordnance Office,
Washington, November 1, 1843.

B.

Apportionment of arms to the militia for the year 1842, *under the act of* 1808 *for arming and equipping the whole body of the militia.*

States and Territories.	Date of return.	For what year returns received.	No. of militia.	No. of arms apportioned in muskets.
Maine - - - -	Jan. 2, 1843	1842	45,729	382
New Hampshire - - -	June 14, 1842	1842	32,471	271
Massachusetts - - -	Dec. 31, 1842	1842	86,611	723
Vermont - - - -	Dec. 1, 1841	1841	27,536	230
Rhode Island - - -	Dec. 15, 1842	1842	14,956	124
Connecticut - - - -	Dec. 1, 1842	1842	46,470	388
New York - - - -	Dec. 23, 1842	1842	188,353	1,578
New Jersey - - - -	Dec. 2, 1829	1829	39,171	327
Pennsylvania - - -	Nov. 5, 1842	1842	251,957	2,104
Delaware - - - -	1827 - -	1827	9,229	77
Maryland - - - -	Jan. 15, 1839	1838	46,864	391
Virginia - - - -	Dec. 1, 1842	1842	106,988	893
North Carolina - - -	Jan. 28, 1842	1841	66,311	554
South Carolina - - -	May 16, 1841	1841	51,594	431
Georgia - - - -	Feb. 15, 1840	1839	57,312	479
Mississippi - - - -	June 6, 1838	1838	36,084	301
Tennessee - - - -	Feb. 13, 1841	1840	71,252	595
Kentucky - - - -	Dec. 10, 1842	1842	77,276	645 5-13
Ohio - - - -	Dec. 28, 1841	1841	180,258	1,505
Indiana - - - -	Jan. 4, 1833	1832	53,913	450
Illinois - - - -	Feb. 24, 1841	1841	83,234	695
Missouri - - - -	Nov. 18, 1841	1841	59,689	499
Arkansas - - - -	Dec. 16, 1825	1825	2,028	17
Alabama - - - -	Feb. 14, 1840	1839	44,332	370
Louisiana - - - -	Jan. 1, 1830	1829	14,808	124
Michigan - - - -	Dec. —, 1842	1842	47,052	393
Florida Territory - - -	Nov. 8, 1831	1831	2,413	20
Wisconsin Territory - - -	Nov. 30, 1840	1840	5,223	44
Iowa Territory - - -	No return.			
District of Columbia - - -	Nov. 20, 1833	1832	1,249	10
			1,750,363	14,615 5-13

G. TALCOTT,
Lieutenant Colonel Ordnance.

ORDNANCE OFFICE,
Washington, November 1, 1843.

No. 9.

REPORT OF THE COMMISSIONER OF INDIAN AFFAIRS.

Department of War,
Office Indian Affairs, November 25, 1843.

Sir: Since the last annual report from this office, there have been removed from Florida to the Indian territory two hundred and twelve Indians, who are now subsisting at a daily expense of $7 68¼. It has happily ceased to be a matter of so much interest as it lately was, how many or how few have been removed from the Indian fastnesses in Florida. The war which so long harassed the United States is at an end. Our officers and soldiers, though their presence in our Southern territory is judicious, if not necessary, are no longer exposed to the hardships of a service that bore upon them with great severity. The drain upon the Treasury is closed. Our citizens can sleep in peace and security. A few Indians only remain in Florida, producing no inconvenience by their presence, the riddance from which is more desirable on account of the ultimate advantage to themselves, that must grow out of their removal west, than from any other reason.

The Chickasaw tribe, as such, emigrated in the years 1837, 1838, and 1839, leaving behind them a few families. These have generally gone west since; and within the last twelve months to the number of about 288, of whom 188 are known to be on subsistence at the cost of $8 93 cents per day. The remainder of them, assumed to be 100, removed without any agency or knowledge, even of the department, and hence we are without the usual information of details. Steps have been taken to feed these volunteer emigrants, but as yet there is no official advice of their having been placed on subsistence.

Under their treaty with the United States, of 17th March, 1842, the Wyandots, on the 12th of July last, set out for the West. The 13th article stipulates that the chiefs shall remove their people without other expense to the United States than $10,000, of which one-half was payable when the first detachment should start, and the residue when the whole nation arrived at their place of destination. There was capacity in their leading men to head the emigration; they carried with them the entire tribe, except some 8 or 10 families, who were disabled by sickness from accompanying them, and who will not probably emigrate before the next spring. The number who departed from the homes of their fathers was reported at 664, and that of those who remain may be put at 50, without the hazard of varying much from the fact. The movement was conducted by themselves exclusively—was in anticipation of the time (1st of April, 1844) at which their treaty obligations bound them to emgrate, and was of course purely voluntary. The State of Ohio, in a rising section of it, has thus been freed from a population that prevented the settlement of a large body of fine lands, and interposed a serious obstacle, the last of its kind in the State, to the advance of a thrifty district—while the Wyandots are also relieved from white influences that were destructive of any hope of Indian improvement.

The 5th article of the treaty stipulates that "the United States agree to pay the Wyandots the full value of their improvements in the country hereby ceded by them in Ohio and Michigan, which valuation shall be made by two persons, to be appointed by the President of the United States, who shall be sworn faithfully to do justice to the parties; the amount of such valuation to be paid at any time after the first day of April, 1843, as shall be acceptable to the Wyandot chiefs, to meet their arrangements for emigrating." The treaty was ratified on the 17th of August, 1842.

In pursuance of the above stipulations, appraisers or valuers were appointed, whose report not having been received when the estimates were sent to Congress at the commencement of the last session, the sum of $20,000 was put down as the supposed value of the Wyandot improvements. On the 22d of February last the report was received, showing the aggregate of valuations to be $125,937 24. This sum, though deemed to be enormously high, it was believed the Government could not decline to pay, because it was ascertained in the mode pointed out by the treaty; and being so found, fixed the United States for the payment of the amount, from which nothing short of the existence of fraud could absolve them. Of that there was neither evidence nor allegation. The additional sum necessary was estimated for, and the proper committee informed that it was the opinion of the department that the Government could not escape its obligation. The appropriation was not augmented as requested, but was restricted to the $20,000 contained in the original estimate. This sum was remitted on the 25th May to the sub-agent, with instructions to pay it ratably to the improvement holders. There still remain due to them $105,937 24, included in the estimates that will be laid before Congress, which I hope may be appropriated.

The arbitrators appointed under the 4th article of the treaty of May, 1842, with the Seneca nation of Indians in New York, to ascertain the several and aggregate value of the reservations of land granted or released, confirmed or surrendered, by said treaty, and to appraise the improvements on the same reservations, respectively, have not yet reported. They have been engaged on their duty, and it is expected will soon complete it.

The erratic habits of the Indian, and the facility with which the impulse of the moment controls him, occasion great trouble to the department. One of the forms in which this disposition manifests itself most inconveniently is the return of emigrants to their old haunts, on ground they have ceded to the United States. The strongest instance of this is the repeated return of the Winnebagoes, in greater or smaller number, to the eastern side of the Mississippi. They were first removed to the western bank, in the year 1840, under the direction of General H. Atkinson; many of them, having returned to Wisconsin, were again placed on the opposite shore by General Brooke, and again they are east; and an order has been issued to restore them to the neutral ground. Unfortunately, although they have ceded the twenty miles of the neutral ground immediately west of the Mississippi, they reserved the right to hunt over them, which affords the means of going to the river bank at pleasure. To this the inducement they have not the moral power to resist carries them, and their degrading thirst for spirits fixes them at the points where it can be indulged. For this there is no remedy but a treaty for the cession of the neutral ground, which was ineffectually attempted in the month of July last.

You will find herewith (No. 1) a tabular statement showing the number of Indians who still remain east of the Mississippi river, of those who have been heretofore removed to its west bank, of those who have been emigrated since the last annual report, and of those who are now on subsistence, and at what daily cost. The table will likewise show the number of those tribes who are indigenous to the West.

We are endeavoring to ascertain the number of souls in each tribe, by actual census. Progress is making in this work, but the Indians, apprehensive of some design on the part of the Government, and confounding the census lists with the enrolments that usually precede emigration, interpose obstacles to their enumeration that make it inaccurate, and sometimes have prevented its being effected. This, and their wild natures and unregulated modes of life, make it difficult, if it be not impossible, to reach exactness.

The treaty adverted to in the last annual report of this office, which was concluded with the Sacs and Foxes of Mississippi on the 11th day of October, 1842, was ratified on the 15th February last. By it we have acquired about ten millions of acres of as fine land, probably, as the world can produce. There is a fact connected with its execution that I think deserves notice. There is a stipulation in the treaty that a line should be run about midway of the cession, north and south, to the northern boundary of Missouri and the southern boundary of the neutral ground; and that the Sacs and Foxes should remove to the west side of this line on or before the 1st day of May last. A commissioner was appointed, and the line run; but before its completion, or the arrival of the month of May, the Indians had, without a murmur or a whine about the change, gone west of the line agreed on, in fulfilment of their covenant. This is a spectacle worthy of contemplation. A race of wild and uneducated (in the broadest sense of the word) Indians, mindful of their engagement to its letter, and more—leaving the grounds on which they had hunted and roamed to the occupancy of our citizens, and voluntarily and quietly, without any agency of ours, turning their backs, in a body of about 2,300 souls, on the scenes of their former joys and sorrows. These men are without the slightest education, except the teaching of observation, utterly opposed to schools and to the labors of the missionary; but they came from the hand of their Creator and ours, a noble, manly race. What might not be made of such material, if they could be persuaded to abandon idleness and intemperance, and to know their ignorance? But of this there is little hope; and the diminution of their number within a few years makes a philanthropic heart grieve that such high qualities should be stifled by savagism, under which they will probably be extinguished.

The treaty with the Chippewa Indians of the Mississippi and Lake Superior, dated on the 4th October, 1842, was ratified on the 10th February last. It secures to the United States a large body of land, said to be agriculturally desirable, bnt especially valuable for its mineral treasures, while the right to the exclusive possession of the southern shore of Lake Superior is commercially important, and will become more and more so as the settlements extend and the mineral resources of its vicinity are developed. A very singular pretension has been set up by a small band of Chippewas, who reside, I understand, partly in the United States and partly in Canada. The first article of the treaty, you will observe, cedes the islands ("all the islands") in Lake Superior. Again, by the same article, the cession embraces "all the Chippewa lands eastwardly of the aforesaid line, running from the American Fur Company's trading post, on the Fond du Lac river, to the intersection of the line of the treaty made with the Chippewas of the Mississippi, July 29, 1837," which includes all the islands in the lake within the territorial limits of the United States.

Notwithstanding the explicitness of the treaty, and the obviously easy mode of adjusting any Indian difference of opinion as to the right to what was clearly ceded by a just division of the consideration that was agreed to be paid, the groundless claim appears to have been encouraged, (2.)

The views of this office are contained in a report made to you on the 20th day of October last, (3.)

The unsettled, and to them and to us disadvantageous position of the Winebagoes on the neutral ground has been already adverted to. The duty of improving their condition, and of relieving our worthy citizens from the annoyances of their neighborhood, received additional force from an act of Congress of 17th July, 1842, making an appropriation to meet the expenses of the negotiation, and induced the department to enter upon it, and to avail itself of the services of Governor Chambers for the purpose. Unfortunately, the effort was unsuccessful. The instructions issued to the commissioner and his report of the issue are appended, (4.)

During the last spring, as you are aware, it was endeavored to effect a treaty of pacification and amity with the wild tribes who are on the confines of the United States and Texas, and occasionally within either. The most amicable dispositions were manifested by the savage chiefs; the attendance, however, was partial, and, at the instance of our neighbor sister Republic, the negotiations have been renewed and are now pending. It was intended that the remote border citizens of both Republics should be benefited by what was attempted last spring, and the present effort has the same objects in view.

The annuities that our treaty engagements stipulate we shall annually pay the respective Indian tribes, whether in money, goods, or provisions, have been seasonably remitted to the various superintendents, agents, and sub-agents, and have been either paid and delivered, or measures to these ends are in a course of execution. The several beneficial institutions that we are bound to establish and maintain, or by contributory aid to them to promote and strengthen, have been carefully attended to; and generally the pecuniary and other obligations of the Government to the Indians, whether directly to themselves, or indirectly but more usefully to their benefactors, and those employed for their benefit, have been faithfully observed.

Herewith you will find exhibits, 1st, of the amount drawn out of the Treasury between 30th September, 1842, and 30th September, 1843, the latter inclusive, out of appropriations for the service of the Indian department for the year 1841; 2d, of the amount drawn on account of appropriations for 1842, between 1st October, 1842, and 30th September, 1843, inclusive; 3d, of the amount appropriated for the service of the Indian department for the half calendar year ending on the 30th June, 1843, the amount drawn thereout to the 1st July, and the balance undrawn, (5.)

A statement of the investments made for Indian account, in State and United States stocks, is submitted, (6.) With it, and as part of the Indian funds that yield them interest, are the sums which we have prudently retained in the Treasury, appropriating annually a sum equal to the interest that would have accrued if we had invested them. This plan, pursued for several years, has many recommendations, that give it a preference over any investment, except the single one of a purchase of United States stock.

For the last three years, I have very earnestly but respectfully pressed the adoption of a new system of supplying Indians with such goods as their necessities or circumstances require, over and above those furnished them under treaties by the United States. In furtherance of the opinion that the Indian trade, as now carried on by persons licensed according to law, is injurious to the buyer, efforts have been made to induce the tribes who are the recipients of money to take goods from us in lieu thereof. The little success that has attended these efforts shows the weight of influence that is acquired by the trader, resulting necessarily from the daily intercourse of buying and selling, and more from the idea that their privations are mitigated, and sometimes their death prevented, by the supplies they find, and can find, as things are, no where else than in the trader's store. That they are often so relieved and their wants supplied is true, but they do not know that they pay enormous prices for every thing they buy, or if they know they care not, for the gratification or relief of the moment absorbs all other considerations. This is the most favorable light in which you can see the picture—that is, where good articles and suitable are furnished to sober and discreet Indians by honest traders. I have pleasure in saying I know many such. If, however, the bold and bad (and they are always to be found in sparse frontier settlements) get footholds among red men, the superior sagacity of the former, unrestrained by principle or conscience, wrings from the latter a thousand fold more than a fair price for articles that are either unserviceable or injurious.

I will not repeat what I have more than once said at length on this important topic. My opinions are unchanged. After renewed reflection, the remedy for existing evils that appears to me best calculated to correct them, is substantially that which I have heretofore recommended. Special attention is again respectfully invited to the consideration of this subject.

The claims to reservations by Chickasaws, which have been referred to in several annual reports from this office, have been examined by the chiefs and commissioners appointed by and under the treaty of 1834, in conjunction with the acting superintendent of the Western territory, who reported the result of that examination on the 28th October, by letter received here on the 26th November, 1842.

The decision was adverse, except as to four of the claimants. It was confirmed by the late Secretary of War, and the Commissioner of the General Land Office has been informed of it, and that the tracts of land which had been reserved from sale to satisfy the foregoing claims, if approved, might again be thrown into market. The effect of the above determination is to make the land, or its proceeds, tribe property, which, in a different event, would have belonged to individual Chickasaws.

There remain undisposed of but few claims to reservations under the Creek treaty of 1832. Within the last year I have sent west, for payment to Creek reservees or their heirs, or to members of the same nation living in the West in 1832, to whom were assigned five sections of land under the 6th article of the treaty "by the Creek tribe," the sum of $4,694 94, which were received at the Indian office in payment of their reservations, respectively. Further payments are required, as conditions precedent to the confirmation of contracts for Creek reservations. When these payments shall be made, the amount will be remitted to those entitled to receive it.

Claims to reservations of land under several other Indian treaties have received the attention of this office, and the sales of them have been either approved or the papers been returned to the respective purchasers, for additional information or the correction of errors.

The commission authorized by the 17th article of the Cherokee treaty of December, 1835, and reorganized under an act of Congress of the 26th day of August, 1842, making an appropriation to defray its expenses, is in session, as is the Choctaw commission that was revived by the law of the 23d August, 1842, to pass upon claims arising under the 14th and 19th articles of the Choctaw treaty of Dancing Rabbit creek, and the supplement thereto.

I had very much at heart some legislative provision by which the Chippewas of Saganaw would be protected in a particular in which I think we are bound to extend our arm over them. I am not less anxious now, and cannot better convey my views than by extracting from my report of last year what was said on the subject in that paper:

"By the treaty of the 14th January, 1837, ratified on the 2d July, 1838, the Chippewas of Saganaw ceded several tracts of land in the State of Michigan, the nett proceeds of which, after deducting the expense of survey and sale, together with the incidental expenses of the treaty, the United States engaged to appropriate to the use of the Indians. Another treaty was concluded with the same tribe on the 23d of January, 1838, ratified on the 2d July, 1838, the sole object of which appears to have been to guard against a sacrifice of the land ceded. The 1st article provides that the lands shall not be sold at public or private sale for a less sum than five dollars per acre, for and during the term of two years from the commencement of the sale. After this period, the minimum price was to be reduced to $2 50 per acre, at which price the lands are subject to entry until the whole should be sold. The 3d article provides, that, to obviate objections to emigrating on the part of the Indians, founded on the fact of a part of the lands not having been sold, any portion not disposed of at the end of five years from the ratification of the treaty shall be sold at such sum as it will bring, not being less than seventy-five cents per acre. The sales did not commence, I understand, until the 13th September, 1841.

"There is an incongruity between the various articles and provisions of the treaty. The first allows two years for the sale at the minimum price of five dollars, from their commencement; stipulates that, after that period, $2 50 shall be the minimum price per acre until all is sold: '*Provided*, That if any part of said lands remain unsold at the expiration of five years from the date of the ratification of this treaty, such lands shall fall under the provision of the third article of this treaty.' I think the intention was to allow five years for the sales from the time they were entered on. The instrument is clumsily drawn, but it is clear and express that two years from their commencement were allowed for sales at five dollars per acre; and this seems to me to furnish the rule of construction for the residue, and interprets the treaty to mean that three years more, if necessary for the purpose, should be given for entries of the land at the minimum price of $2 50, after which the land remaining was to be sold at a price not smaller than seventy-five cents per acre.

"If the five years are to run from the ratification of the treaty, it is obvious that the two years will not be had for sales at five dollars, and no opportunity afforded for them at $2 50. I received, on the 14th November instant, a memorial from the chiefs and headmen of the Chippewa Indians of Saganaw, protesting against sales at seventy-five cents, and praying for the adopion of such measures as will guard against them.

"Their prayer is, in my opinion, just, and ought not only to be granted, but I think they should also receive the full benefit of the stipulation allowing two years from September, 1841, within which the lands should not be offered at less than $5 per acre, and three years thereafter during which they should be sold, as far as practicable, at $2 50. To effect this, an act of Congress will be necessary, the passage of which I respectfully recommend. If this is not done during the next session, the following summer will probably see the country covered by settlers under the pre-emption law of 1841, as five years from the ratification of the treaty will have expired on the 2d of July, 1843."

A bill was reported by the Committee on Indian Affairs, of which I annex a copy, (7,) but it failed to become a law. I hope the next session will not be permitted to elapse without the passage of that or a bill of similar provisions.

On the 18th of August, 1843, I addressed a letter to the Commissioner of the General Land Office on this subject, (8,) and am happy to say that my request was complied with.

But my apprehension is that our citizens will settle upon this land, and, grasping after homes, will insist that the five years have expired, and that the lands may be sold for the minimum price.

The law of the last session of Congress, authorizing the Secretary of War to sell land, with the improvements thereon erected by the United States, when they shall be no longer required, and the land has become public property, passed at the instance of this department, will no doubt be the instrument of saving money to the Government. By virtue of it, several orders have been already issued for the sale of land on which we had erected buildings, &c., which would otherwise have become the property of settlers. A part of the money drawn from it will return again to the Treasury, instead of the waste which has often heretofore followed acquisitions of territory from the Indians.

It is matter of deep regret that excitement should be roused and maintained, as well among factions in the same tribe as between different tribes of Indians. Of the former, the most striking and at the same time the most to be lamented instance is the Cherokees. The feuds that divide them are not of recent origin, and, having acquired strength and stiffness from time, are not likely, I am sorry to add, to yield to the considerations that ought to bind them with the chords of amity into one tribe in feeling, as they are one in government. Violent acts, and several murders, have stained their late annals, that can be placed, if you choose, to the account of a sudden impulse, a brawl, or intention to plunder; but which, it cannot be denied in some of the prominent instances, are probably owing to causes that originated in 1835. There are no measures of conciliation within the legal power of the department that it is not willing and would not be happy to resort to; but the sources of this discontent lie deeper than we can reach. They are the dissatisfaction and discontent of two parties or factions among the Cherokees with each other; they are different readings by these rival interests of stipulations contained in treaties and, without much regard to the opinion of the department, at least one of these factions adheres to its own construction with a pertinacity that will not listen to argument, and is impenetrable by any persuasion that does not square with its preconceived notions of right and interest. It is hoped that the animosity towards each other will gradually subside, and that good feeling will be substituted for it; that this, among the most numerous, and enlightened beyond all other tribes, will no longer set the bad example, to those weaker and more ignorant, of cherishing evil passions, and of allowing to some extent the advantages they possess to remain unused; but, instead thereof, will, with their superior education and good schools, with their printing press, with their courts and juries, and with their printed constitution and laws, based upon liberal principles, indulge the laudable ambition of being the model Indian nation, to which those less fortunate or less worthy shall look for whatever is deserving of imitation; that, as they are first in intelligence, they may acquire the still more enviable reputation of being first in the practice of public and private virtue; and that, becoming the exemplars to their brother Indians of whatever is most praiseworthy in man, they shall stand on an eminence from which they can look on the past with pleasure, and to the future with high anticipations for the whole red race.

The Sioux and Chippewas have been at war from time immemorial, but it is a gratification to state that a treaty of peace and amity was concluded between them on the 2d day of August last, at Fort Snelling. Its terms are few and simple, and no others were needed. How long it may restrain both or either of the parties is uncertain. Their young men are intractable, and may violate its provisions at any moment; if they do not, it will be a very agreeable surprise. This measure was, however, regarded as so important that it was intended, through the department's agents, to attempt it, when we were happily relieved by the voluntary acts of the parties to it, encouraged and aided in their negotiations by the United States officers, civil and military, at Fort Snelling.

The character of the Sioux, and their fondness for war, may be gathered from the fact, that, about a month before they entered into the foregoing pacification with the Chippewas, and while at deadly feud with the latter, who, and not they, sought the arrangement made, a Sioux war party attacked hunting parties of both Omahas and Pawnees, in which lives were taken on both sides, and property captured by the former. The Sioux or Dahkotas consist of many bands, and have the Chippewas north and northeast of them, and the Omahas, Pawnees, Sacs and Foxes, and other tribes, south and southwest of them, all or any of whom they were ready to meet at any moment, as they did attack several of them, whenever a favorable opportunity offered. They are a restless, roving, active people, numerous and brave, difficult of restraint, and careless of consequences.

The Otoes during the last summer manifested a most insubordinate spirit, insulted their agent most grossly in open council, and a party of ten of them fired upon some boats descending the river Platte, by which one man was severely wounded, and the lives of all on board were endangered. The superintendent of Indian affairs at St. Louis was instructed to repair to the Otoe tribe, to inquire into all the facts, and to tranquillize the Indians if practicable. He discharged the duty very satisfactorily, composed the Indian inquietude, and demanded and obtained the surrender of the two most guilty of the young men engaged in the above outrage, to await the disposition of the

President. They were carried to and confined at Fort Leavenworth, where they made an effort to escape, in which one was successful and the other was killed. What effect this event has had on the tribe is unknown here; some apprehension has been felt, but we have no advices on the subject.

The severity of the last winter made the expenditure of $500, being an advance out of the Pawnee annuity for the year 1843, for goods and provisions to be distributed among the members of that tribe, indispensable. It was represented to the department, by report of the agent, received on the 31st of October, 1842, that, in consequence of the failure of their corn crops, the Sioux on the upper St. Peter's, and especially those at Lac qui Parle, would die of cold and starvation during the following winter, if not aided by the Government. All the assistance that the department was legally competent to extend to them was bestowed, in the shape of blankets, guns, and ammunition, to the amount of $2,500. It was a pleasure to have been since assured that this relief reached them, late in the season as was the order, and that it was effective.

The exertions of the Indian department in all its branches have been unremitted, active, and strenuous, to prevent the use of ardent spirits by the Indians. Our duty in this particular is imperatively enjoined by every consideration that can actuate faithful officers and good men. It is the one sin that the Indians cannot abstain from; it is the one impediment to their growth in civilization, or to any advance even towards it. The Territory of Iowa did itself honor in the year 1839, by passing a law inhibiting the sale of spirituous or intoxicating liquors to Indians within its limits, and I had the gratification to receive from the Governor, in March, a copy of a law, approved by him on the 23d January last, still more strongly forbidding this infamous traffic, by increasing the penalty for practising it. The Governor of Wisconsin, anxious to arrest this moral pestilence, suggests, in his annual report, the enactment of a law by the United States, prohibiting the sale of spirits to Indians within either of the Territories. In this recommendation I join very heartily; and if Wisconsin, like Iowa, should legislate to the same end, it would multiply the probabilities of detecting those who, without remorse, blight the Indians' prospects.

The best-directed efforts, seconded by a hearty zeal, have hitherto failed to suppress this crying evil, which, however, I now hope more strongly than hitherto we shall ultimately be enabled to correct, and that through an instrumentality which, while it strengthens our hands for good, weakens in the same proportion the effect of the under currents that were undermining, and to a less extent still counteract, our best efforts. There are temperance societies in several of the tribes, and by some of them laws have been passed to put down the sale and use of whiskey. I am advised that lately a national council of the Creeks had the question before them, and, with a just abhorrence of this vicious indulgence, they increased the rigor of the prohibition that they had previously enacted against the traffic in ardent spirits. All these measures are highly creditable to those who have been active in bringing them about, and afford the best, perhaps the only really good augury of thorough and enduring reformation we have seen.

The improvement of men, civilized or savage, is not traceable to an abstinence from one vice or the practice of a single virtue. Vices, as well as virtues, are german to each other, and are never, or rarely, found alone. One vice demoralizes and corrupts the heart, from which it necessarily displaces, by its very existence, the corresponding excellence. The entrance of even a single virtue into a man's character divides control over him with whatever vices attach to him; neither the one nor the other, however, remains long, or it remains not alone, but draws after it a kindred feature. The increase of temperance, and a contempt for the degradation of drunkenness, which has been most strikingly manifested in the Southwest, has been accompanied by a strong disposition to extend the means of Indian education—a desire which shall not fail of its accomplishment, which in its execution will carry its own reward, and which to the beneficiaries of the good work is fraught with every blessing of time and every hope for eternity. So thinking, I cannot withhold any aid I may give to add length and strength to the great moral lever by which the Indian race is destined to be raised, as all other men have been lifted, from the miriness of idleness and vice, to the high ground of useful occupation and virtue. The tabular statement, exhibiting the number of pupils taught at the respective schools for the education of Indian youth, where established, and by whom conducted, herewith submitted (9,) will give you general information, while the details will be found in the several reports appended, (10 to 66, inclusive.) You will likewise find an exhibit of the amount and disposition of funds provided by treaty for education purposes, together with a statement, communicating the condition of the civilization fund, and its application to such objects as were believed to merit it, (67 and 68.)

I cannot enter minutely into the interesting subject of Indian education, of which I have repeatedly spoken officially, and especially in my annual reports, and to which, in large schools of an elevated character, or in those of less pretension, I hold myself bound to contribute to every lawful and judicious extent. It would be improper, however, to omit a particular reference to the noble stand taken by the Choctaws in furtherance of this great object. It will be perceived, from the official papers annexed, (69 to 72, inclusive,) that no less a sum than $18,000 per annum has been applied, out of the moneys they are entitled to receive from the United States, to schools; a sum that, with Government funds applicable to their education, will place every child in the nation at school, if prudently managed. If this example should be followed by other tribes, what blessings their annuities would become, instead of being wasted, and often converted into curses, as they now are! Of this we ought not to despair. The appropriation, now for the first time made by an Indian tribe, of money distributable among its members by the head, and the establishment of schools thereby, must impress other tribes with a conviction of the truth, that no investment of their means is equal to the stock the Choctaws will soon have in school houses and in books and learned tutors, of which the rich dividend will be cultivated minds, more moral and religious, and, by necessary consequence, happier lives.

By a comparison of the tables, it will be seen that the number of scholars is on the increase, the reports of the present year exhibiting a larger number than were receiving tuition twelve months ago. In this fact alone encouragement is found to abate nothing of effort in so good a cause, in support of which no issue can deprive this office of the consciousness of having honestly, if not wisely, exerted all the means at its disposal.

One other fact in connexion with education I cannot omit. A Seminole Indian boy, some nine years ago, was carried to sea from St. Augustine, and above twelve months since, by singular good fortune, found his way into the family of the Rev. Mr. Douglass, pastor of the mariner's church, Philadelphia. Here he was instructed in letters and duty. In August last, a correspondence took place between Mr. Douglass and myself concerning this young person, who is named John Bemo, that resulted in his being sent to the Indian territory, under the patronage of this department, as a teacher of his wild brethren. The view entertained of his capacity and probable usefulness may be gathered from the official order to the acting superintendent of Indian affairs to carry him west, which is annexed, (73.)

This is an interesting occurrence. John is not more than twenty years of age, and returns, after much wandering, and an absence that separated him from the horrors of war, to a savage but his native tribe, an educated and religious youth, qualified and zealously willing to instruct his brethren. He will place before them a model, as I am informed, of truthfulness and general morality, while he will impart to them whatever knowledge he possesses, and enable them to form some just idea of the Providence to which he is on many accounts so deeply indebted. The divine who humanely stretched out the supporting arm to this seafaring Indian is entitled to the credit of whatever good may result from his labors, and to the merit of a kind and generous deed, let Bemo's course issue in what it may.

The general condition of the various Indian tribes will be found in the reports of the several superintendents, agents, and sub-agents, (74 to 103, inclusive.) These are, together with their frequent communications throughout the year, the true sources of correct information in regard to Indian affairs. The facts they contain are stated by gentlemen of respectability, character, and capacity; the inferences they draw from them, and the measures they recommend, are the result of much observation and reflection, and often of long experience. In general, their duties are discharged ably and usefully; and to several of them, by many the larger number, it would be unjust not to commend their official conduct as intelligent and faithful.

Where I have informed you education is most highly prized, you will discover that the condition of the Indians in all other respects is farthest advanced. Among the Cherokees and Choctaws, for instance, you find printed or written constitutions and laws. The former have a printing press, from which papers are issued in the English and also in the Cherokee language, after George Guess' alphabet. Both tribes have courts and sheriffs, and trial by jury, and penalties for crime. Many other features of their government might be mentioned. What I have said exhibits a pleasant spectacle. The Choctaws have ten or twelve cotton gins, and are an agricultural and industrious people, whose advance it is very agreeable to notice, for they claim, for themselves and their ancestors, never to have been arrayed in hostility against the whites; and it is a well-founded appeal to our kind feelings.

The Creeks, too, the most powerful, and as friendly as any other tribe in the Southwest, are improving their condition. The cause of education is growing among them. They raised more corn than they will consume this year, and the fact that they have a surplus of their staple article is evidence of industry and forecast, which are never known among the wholly uncivilized.

The Chickasaws are under the same government with the Choctaws, forming one of four districts that make up their common country, and do not differ materially from them, though they are not quite so forward in education, the great highway to Indian improvement. I might notice the great and favorable change reported of the Indians in Michigan, and more or less that is gratifying elsewhere, but the length to which this paper has been already stretched forbids it.

Some of these tribes, the most incredulous must admit, are fairly launched on the tide of civilization. The fact of Indian capability to become all that education and Christianity can make man is incontestably established. Those tribes who enjoy the happy distinction of being headmost in the possession and use of the proofs of this fact will have the still further gratification of leading their less fortunate and more benighted brethren, by the most benign influences, to imitate their example.

It has long been a practice of the officers and agents of the British Government to distribute goods, ammunition, and fire arms, to the Indians living within the territorial limits of the United States, who went across the line to designated depôts to receive these favors. The attention of our Government has been attracted to this unneighborly conduct from time to time, and it has been the subject of two reports, by myself, on calls by resolutions of the House of Representatives U. S., respectively dated 19th March, 1838, and 9th March, 1840. These reports contain or refer to all the information I have on the subject, and are to be seen in House Docs. for 1838–'39, 3d session 25th Congress, vol. 3, No. 107; Docs. for 1839–'40, 1st session 26th Congress, vol. 4, No. 178. The practice in possible relations of the two Governments might have most serious results, and it was felt to be an injurious proceeding, of which we might justly complain. I have been gratified by the information that the British officers announced to such of our Indians as visited their posts for presents this year, that hereafter none will be given to Indians resident within the limits of the United States.* I hope, therefore, we may confidently look for the discontinuance of a measure of direct evil tendency, and which, it is said, has produced border jealousies and heartburnings on both sides the line.

I submit a report (104) from the sub-agent west of the Rocky Mountains, received on 9th August last. It furnishes some deeply interesting and curious details respecting certain of the Indian tribes in that remote part of our territories. The Nesperces are represented to be "more noble, industrious, sensible, and better disposed towards the whites," than the others. Their conduct on the occasion of an important meeting between Dr. White and their leading men impresses one most agreeably. The school established for their benefit is very numerously attended, while it is gratifying to learn that this is not the only establishment for Indian instruction which has been made and conducted with success.

There will also be found in this paper some particulars as to the soil, watercourses, &c., of the Territory of Oregon, which may be interesting at this time, when public attention is so much directed to the region beyond the Rocky Mountains.

Respectfully submitted.

T. HARTLEY CRAWFORD.

Hon. J. M. PORTER,
Secretary of War.

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* It was expected that a termination would have been made of these distributions in 1839, as you will observe by reference to the report of 1840; but that expectation was not realized.

List of documents accompanying the report of the Commissioner of Indian Affairs.

1. Statement of the number of Indians east and west.
2. Letter from W. Cunningham, enclosing one from A. Brunson respecting claims of certain Chippewas to the islands in Lake Superior.
3. Report from Commissioner of Indian Affairs to the Secretary of War on the same subject.
4. Instructions to Governor Chambers for making a treaty with the Winnebagoes, and extract from his report.
5. Fiscal statements.
6. Statement of investments in stocks for Indians.
7. Bill reported by Committee on Indian Affairs, on the subject of the lands of the Chippewas of Saganaw.
8. Letter from Commissioner of Indian Affairs to Commissioner of the General Land Office, on same subject.
9. Statement of schools.

School reports.

10. Report of T. H. Stanley and others—Friends' Shawnee school.
11. Extract from R. A. Calloway's report—Osages.
12. Extract from W. P. Richardson's report—Sacs, Foxes, and Iowas.
13. Extract from Samuel Allis's report—Pawnees.
14. Report of Francis Barker—Shawnees.
15. Report of J. D. Blanchard—Delawares.
16. Report of S. M. Irvin—Sacs, Foxes, and Iowas.
17. Report of T. F. Verreyett—Pottawatomies.
18. Report of William Hamilton—Sacs, Foxes, and Iowas.
19. Report of P. Dougherty—Chippewas.
20. Report of A. Bingham—Chippewas.
21. Report of Francis Pierz—Chippewas.
22. Report of A. Bingham—Chippewas.
23. Report of Bishop Lefevre—Ottowas and Chippewas.
24. Report of W. H. Brockway—Chippewas.
25. Report of T. Santelliz—Chippewas.
26. Report of L. Slater—Ottowas.
27. Report of S. Hall—Chippewas.
28. Report of James Selkrig—Chippewas.
29. Report of Stephen Fairbanks—Ottowas.
30. Report of George N. Smith—Chippewas.
31. Report of William Armstrong—Choctaws.
32. Report of Samuel Worcester—Choctaws.
33. Report of H. G. Rind—Choctaws.
34. Report of E. Hotchkin—Choctaws.
35. Report of Anna Burnham—Choctaws.
36. Report of C. Kingsbury—Choctaws.
37. Report of R. D. Potts—Choctaws.
38. Report of J. P. Kingsbury—Choctaws.
39. Report of Cyrus Byington—Choctaws.
40. Report of Alfred Wright—Choctaws.
41. Report of A. M. M. Upshaw—Chickasaws.

42. Report of S. G. Patterson—Quapaws.
43. Report of J. L. Dawson—Creeks.
44. Report of W. N. Anderson—Creeks.
45. Report of J. R. Baylor—Creeks.
46. Report of J. F. Collins—Cherokees.
47. Report of Elizur Butler—Cherokees.
48. Report of S. Foreman—Cherokees.
49. Report of Jacob Hitchcock—Cherokees.
50. Report of D. S. Butrick—Cherokees.
51 Report of S. A. Worcester—Cherokees.
52. Report of Robert Gregory—Choctaws.
53. Report of Jared Olmstead—Choctaws.
54. Extract from report of Daniel Gavin and S. Denton—Sioux.
55. Report of John L. Seymour—Winnebagoes.
56. Report of David Lowry—Winnebagoes.
57. Report of James R. Goodrich—Chippewas.
58. Report of Solomon Davis—Oneidas.
59. Report of T. T. Vandenbrock—Menomonies.
60. Report of J. R. Goodrich—Oneidas.
61. Report of C. S. Hayward—Brotherton Indians.
62. Report of Augustus Warren—New York Indians.
63. Report of Anson Gleason—Mohegan.
64. Report of D. Vanderslice—Choctaw academy.
65. Report of W. Suggett, inspector Choctaw academy.
66. Report of S. Peck, secretary of Baptist board of missions.
67. Statement showing the amount and disposition of funds provided by treaty for education purposes.
68. Statement of civilization fund.
69. Letter of P. P. Pitchlynn—education of Choctaws.
70. Letter of William Armstrong—education of Choctaws.
71. Letter of Commissioner of Indian Affairs—education of Choctaws.
72. Letter of Commissioner of Indian Affairs—education of Choctaws.
73. Letter of Commissioner of Indian Affairs—education of Choctaws.

Reports of superintendents, agents, and sub-agents.

74. Report of His Excellency John Chambers, Governor of Iowa.
75. Report of Amos J. Bruce, agent for the Sioux of Mississippi.
76. Report of John Beach, agent for the Sacs and Foxes of Mississippi.
77. Report of D. Lowry, sub-agent for the Winnebagoes.
78. Report of John Thomas, miller for Winnebagoes.
79. Report of George Wilson, farmer.
80. Report of D. D. Mitchell, superintendent at St. Louis, Missouri.
81. Report of R. A. Calloway, sub-agent for the Osages.
82. Report of R. S. Elliott, sub-agent for Chippewas, Ottowas, and Pottawatomies.
83. Report of W. P. Richardson, sub-agent for Iowas, Sacs, and Foxes.
84. Report of Daniel Miller, agent for Pawnees, Omahas, &c.
85. Report of R. W. Cummins, agent for the Delawares, &c.
86. Report of Daniel Miller, agent for the Pawnees, Omahas, &c.
87. Report of William Armstrong, acting superintendent Western Territory.

88. Report of A. M. M. Upshaw, agent for the Chickasaws.
89. Report of P. M. Butler, agent for the Cherokees.
90. Report of T. L. Judge, agent for the Seminoles.
91. Report of B. B. R. Barker, sub-agent for Quapaws, &c.
92. Report of J. L. Dawson, agent for the Creeks.
93. Report of Robert Stuart, acting superintendent in Michigan.
94. Report of James Ord, sub-agent at Sault Ste. Marie.
95. Report of O. D. Goodrich, farmer.
96. Report of Joseph Dame, farmer.
97. Report of His Excellency J. D. Doty, Governor of Wisconsin.
98. Report of George W. Lawe, sub-agent for the Menomonies and Oneidas.
99. Report of Alfred Brunson, sub-agent for the Chippewas of Mississippi.
100. Report of Lyman M. Warren, farmer.
101. Report of J. Russell, farmer.
102. Report of S. Osborn, sub-agent for the New York Indians.
103. Report of Allen Hamilton, sub-agent for the Miamies.
104. Reports of E. White and H. H. Spalding, relative to Indians, schools, country, &c., west of Rocky Mountains.

APPENDIX.

No. 1.

Statement showing the number of each tribe of Indians, whether natives of, or emigrants to, the country west of the Mississippi, with items of emigration and subsistence.

Names of tribes.	Number of each tribe indigenous to the country west of the Mississippi river.	Number removed of each tribe wholly or partially removed.	Present western population of each tribe wholly or partially removed.	Number remaining east of each tribe.	Number removed since date of last annual report.	Number of each now under subsistence west.	Daily expense of subsisting them.
Chippewas, Ottowas, and Pottawatomies, and Pottawatomies of Indiana	-	5,779	2,298	(c) 92			
Creeks - - - - - - - - -	-	24,594	24,594	744			
Choctaws - - - - - - - - -	-	15,177	15,177	3,323			
Minatarees - - - - - - - - -	2,000						
Florida Indians - - - - - - - - -	-	3,824	3,824	-	212	212	$7 68½
Pagans - - - - - - - - -	30,000						
Cherokees - - - - - - - - -	-	25,911	25,911	1,000			
Assinaboins - - - - - - - - -	-	7,000					
Swan Creek and Black River Chippewas - - - -	-	62	62	113			
Appachees - - - - - - - - -	20,280						
Crees - - - - - - - - -	800						
Ottowas and Chippewas, together with Chippewas of Michigan -	-	-	-	7,055			
Arrapahas - - - - - - - - -	2,500						
New York Indians - - - - - - - -	-	-	-	3,293			
Gros Ventres - - - - - - - - -	3,300						
Chickasaws - - - - - - - - -	-	4,930	4,930	(a) 80	(b) 288	(e) 198	9 40½
Eutaws - - - - - - - - -	19,200						
Stockbridges and Munsees and Delawares and Munsees - - - -	-	180	278	320			
Sioux - - - - - - - - -	25,000						
Quapaws - - - - - - - - -	476						

STATEMENT—Continued.

Names of tribes.	Number of each tribe indigenous to the country west of the Mississippi river.	Number removed of each tribe wholly or partially removed.	Present western population of each tribe wholly or partially removed.	Number remaining east of each tribe.	Number removed since date of last annual report.	Number of each now under subsistence west.	Daily expense of subsisting them.
Iowas - - - - - - - - -	470						
Kickapoos - - - - - - - -	–	588	505				
Sacs and Foxes of Mississippi - - - - - -	(*f*) 2,348						
Delawares - - - - - - - -	–	826	1,059				
Shawnees - - - - - - - -	–	1,272	887				
Sacs of Missouri - - - - - - -	(*f*) 414						
Weas - - - - - - - -	–	225	176	30			
Osages - - - - - - - -	4,102						
Piankeshaws - - - - - - - -	–	162	98				
Kansas - - - - - - - -	1,588						
Peorias and Kaskaskias - - - - - - -	–	132	150				
Omahas - - - - - - - -	1,600						
Senecas from Sandusky - - - - - - -	–	251	251				
Otoes and Missourias - - - - - - -	931						
Senecas and Shawnees - - - - - - -	–	211	211				
Pawnees - - - - - - - -	12,500						
Winnebagoes - - - - - - - -	–	4,500	2,183				
Camanches - - - - - - - -	19,200						
Kiowas - - - - - - - -	1,800						
Mandans - - - - - - - -	300						
Crows - - - - - - - -	4,000						
Wyandots of Ohio - - - - - - -	–	664	–	(*d*) 50	664		
Poncas - - - - - - - -	800						
Miamies - - - - - - - -	–	–	–	661			
Arickarees - - - - - - - -	1,200						
Menomonies - - - - - - - -	–	–	–	2,464			

Cheyenes	2,000						
Chippewas of the Lakes	-	-	-	2,564			
Blackfeet	1,300						
Caddoes	2,000						
Snakes	1,000						
Flatheads	800						
Oneidas of Green Bay	-	-	-	675			
Stockbridges of Green Bay	-	-	-	207			
Wyandots of Michigan	-	-	-	75			
Pottawatomies of Huron	-	-	-	100			
	168,909	89,288	83,594	22,846	1,164	410	17 09

NOTES.

(*a*) This, as far as appears from any data in the office; but, in point of fact, there are most probably no or very few Chickasaws remaining east.

(*b*) In this number is included a party, assumed to be 100, who clandestinely removed themselves; but they are withheld from the next column, because it is not yet known what arrangement has been made for their subsistence, though instructions on that subject have been addressed to the Choctaw agent.

(*c*) These 93 are Ottowas of Maumee.

(*d*) This number is conjectural, but cannot be far from the truth, as Mr. McElvaine, the sub-agent, states that but 8 or 10 families still remain.

(*e*) Ten of these emigrated as far back as January, 1842; but, as the number was so small, the arrangements for their subsistence were postponed until they could be included in some larger party, such as that which subsequently arrived.

(*f*) These Indians do not properly belong to this column, but are so disposed of because the table is without an exactly appropriate place for them. Originally, their haunts extended east of the river, and some of their possessions on this side are among the cessions by our Indians to the Government, but their tribes have ever since been gradually moving westward.

No. 2.

United States Mineral Agency,
Lake Superior, Sault Ste. Marie, October 2, 1843.

Sir : I have the honor to enclose, herewith, a copy of a letter, of a most extraordinary character, from Mr. A. Bruuson, Indian agent at Lapointe, which came to hand this day.

* * * * * *

In July last I visited Mr. Brunson at his office at Lapointe, at great inconvenience and expense, with a view of having a conference upon the objects of my agency, and exhibited to him my letter of instructions, so that he could not fail to understand the whole subject.

* * * * * *

On my arrival at Lapointe, I found Mr. Brunson was making out his pay roll, and he then stated to me that there was a band of Indians living upon Isle Royale, and inquired whether their names ought not to be placed upon the roll, so that they might draw their portion of the money, &c. I replied, that I had just left that island, and that there were no Indians living upon it. That an old exiled Indian with his three sons came in a canoe to see me, who told me so : but that he, with a few others, lived on the main land, about fifteen miles off, and near the Grand portage.

I stated to him, further, that it was of the utmost importance that all of the Indians interested in the lands purchased under the treaty should be represented, and should receive their pay, and relinquish their claim to the whole country, and that Isle Royale was included; that I had already taken possession of the same, by granting permits; that the locations had been made, and received my approval; that surveyors and miners were then at work under those permits; and that I considered the island quite rich for its mineral properties, and should recommend its being reserved by the Government, as mineral land, &c.

Having seen most of the Indian chiefs, and, as I supposed, done all that I could to satisfy them and the Indian agent of the right course of policy and duty, and finding it necessary for me to be at the Ontonagon river to attend to the copper rock business, I left Lapointe on the 10th September, a few days before the payment, leaving Mr. Campbell, one of my assistants, at that place. On the receipt of his letter, I examined the treaty, in connexion with the map you furnished me, (to which I beg leave to refer you,) and must confess that if any other man than him, placed in the situation he was, had conducted as he has, and written such a letter, I should have thought him insane. I have written Mr. Brunson, directed to him at Prairie du Chien, saying it was quite out of my power to see him again this year, but that I differed with him in opinion throughout; that the treaty would hold all of those islands, without any shadow of doubt; and I insisted on his aiding me in giving full force and effect to the treaty.

* * * * * *

I have the honor, &c.

WALTER CUNNINGHAM,
Special Agent, &c.

Hon. James Madison Porter,
Secretary of War.

LAPOINTE INDIAN AGENCY,
September 27, 1843.

SIR: I have a moment only to inform you that the Indians of this agency utterly and peremptorily deny selling the Isle Royale, and they refuse to let the Grand Portage band participate in the payment, on condition of relinquishing their claim to the island. The consequence is, this land is not bought of the Indians, and the chief who claims it notified me to remove the whites from the island until it is bought.

They have authorized me to present their written proposal to the President to sell the island, together with eighteen smaller ones, containing in all about 265,000 acres, for $60,000, in twenty-four annual payments of $2,500 each.

This sum would give about twenty-four cents per acre. You know the value of the island; and the smaller ones scattered along the northwest coast of the lake, nearly up to Fond du Lac, are said to be equally rich in copper.

I am decidedly of the opinion it is better for Government to buy the island than to contest with the poor Indians.

Their proposal is such, that if the President and Senate ratify and approve it, the sale is perfected without the expense and trouble of a formal treaty.

Something must be done. Several miners wish to winter there. I have told the Indians to rest easy, and not disturb the whites; that their great father will do them justice. But should the President and Senate not ratify and approve of their proposal, they undoubtedly will drive off the whites; and if resistance is made, or if Government attempts to hold the island, because it got illegally into the treaty—that is, those who sold their land had no right to sell this island, because they did not own it, and of course in law and equity it cannot be legally claimed under the sale. But if Government attempts to hold it in virtue of the treaty, it most likely will lead to serious trouble, as it is on the British line, where men would gladly fan the flame of discord, if once ignited, and supply the Indians with the means of offensive and defensive war.

The Black Hawk and Florida wars grew out of a similar circumstance, and cost millions of dollars, where thousands might have bought an honorable peace. These Indians have justice and equity on their side, and I hope Government will accede to their proposal this winter, and send them their first payment next season, and not hinder the miners from operations.

I have now no time to say more. I shall go immediately home, and return here to spend the winter; and, if convenient, I should like to see you on this subject before the 1st November next.

Respectfully,
A. BRUNSON.

General WALTER CUNNINGHAM.

UNITED STATES MINERAL AGENCY,
Lake Superior, Sault St. Marie, October 6, 1843.

SIR: It has been stated to me, by several persons of character who were present at the recent payments made at Lapointe, that the cause of the small band of Indians living near Isle Royale and the Grand portage refusing to accede to the treaty arose from the fact that the Leech Lake and Western bands all refused to allow them to participate in the money, goods, and provisions, which had been sent them; saying to the Grand Portage band, that their lands were not sold; when they were sold they would get their pay. Their reply was, Isle Royale is our *hunting ground*, and always has been; you never came there to hunt; it is but fifteen miles from our shores, while it is sixty or seventy miles from yours; and you have no right to it. And they immediately notified our Indian agent of their determination to hold possession of that, and all of the islands which were near their shore.

It has been suggested to me that the agents and traders of the Hudson Bay Company at Fort William, who have long enjoyed the confidence and friendship of that band, may have influenced them to take the course they have. In all cases the Indians are indebted to their immediate traders; and it is said this band owe both the American Fur Company and the Hudson Bay Company. This information is derived from the interpreter of the Government and other men of respectability.

It is a matter of surprise to me that our agents did not, immediately after learning these facts, call together the chiefs, and notify them of their determination to withhold the money, goods, and provisions, until every band of the whole tribe should be satisfied, so that they could obtain a full and complete relinquishment of all the claims to the islands; that they would postpone the payments until *that* was done. They had a company of United States troops with them, which would have ensured quiet and peace.

One day would have brought them all to their senses, when they would have agreed among themselves, received their pay under the treaty, and all would have gone home perfectly satisfied.

The season has so far advanced that nothing further can be easily done with that band of Indians until next spring, when a visit to them by a person duly authorized by you to advise and consult with them would greatly tend towards keeping them quiet until the next payment.

I am, with regard, your obedient servant,

WALTER CUNNINGHAM.

HON. JAMES MADISON PORTER,
Secretary of War.

No. 3.

WAR DEPARTMENT,
Office Indian Affairs, October 20, 1843.

SIR: I have the honor to report on the letters, of the 2d and 6th instant, of Walter Cunningham, Esq., to you, covering a communication from Alfred Brunson, Esq., the Indian sub-agent at Lapointe.

Mr. Brunson says: "The Indians of this sub-agency utterly and peremptorily deny selling the Isle Royale, and they refused to let the Grand Portage band participate in the payment on condition of relinquishing their claim to the island. The consequence is, the island is not bought of the Indians, and the chief who claims it notified me to remove the whites from the island until it is bought." He adds: "They have authorized me to present their written proposal to the President to sell the island, together with 18 smaller ones, containing in all about 265,000 acres, for $60,000, in 24 annual payments of $2,500 each."

The first article of the treaty of 4th October, 1842, contains the cession;

and, in describing it, holds this language: "Beginning at the mouth of Chocolate river of Lake Superior; thence northwardly across said lake to intersect the boundary line between the United States and the province of Canada; thence up said Lake Superior to the mouth of the St. Louis or Fond du Lac river, (including all the islands in said lake,") &c.

There are some things so clear that any attempt at making them more so is very apt to obscure them. This I take to be one of those cases. The treaty with the Ottowas and Chippewas, of 28th March, 1836, has for one of the boundaries of its cession the line between us and Canada, from the straits and river St. Mary's to a point in Lake Superior opposite the mouth of Chocolate river, to which the line runs south from said point. The treaty of 1842, it will be observed, bounds its cession from the mouth of Chocolate river north to said point—that is, a part of the west line of the treaty of 1836 is the east line of the cession of 1842—the latter running up "Lake Superior to the mouth of the St. Louis or Fond du Lac river, (including all the islands in said lake.") Thus is there this express declaration in the treaty itself, that all the islands south of the line between us and Canada were ceded. Besides, there could have been no necssity of running up north to the Canada line in Lake Superior, unless we meant to include every acre of land south of it; for we could have bounded the cession by the lake, adding, "and the islands nearest the southern shore thereof," or some such expression, if it was intended to exclude the islands near the northern shore. We meant to include them; and therefore it was that we struck the Canada line, and, instead of following the United States and provincial line north of Isle Royale and other small islands near it, we said up Lake Superior, so as to include all the islands; because the Canada line leaves the lake at the mouth of Pigeon river, west of Isle Royale, and the description adopted was the simplest.

Of the rights acquired by the treaty, and of the intention on the one side to acquire them, and on the other to grant them, there can be no question; and I cannot but wonder at the course of Mr. Brunson, which seems to rely upon an Indian assertion, contradicted by a treaty solemnly made and ratified, as sufficient to set aside that treaty in an important particular, and, in his opinion, to justify a demand of a large sum of money by the Indians in his sub-agency from the United States.

I would respectfully recommend that copies of all these papers be sent to R. Stuart, Esq., acting superintendent in Michigan, who negotiated the Chippewa treaty of 1842, and that his statement be requested in reference to the intention of the parties to it, and whether or not it was fully explained and interpreted to them. The mistaken course of the sub-agent will probably make a visit of Mr. Stuart to Lapointe necessary next spring, (it being now too late in the season to allow of one,) that the Indians may be informed of what measures the Government will pursue in regard to this matter, and to their relinquishment of a ground that others have probably induced them to assume. It is only, in my opinion, necessary that they should see that the Government understands its rights, and will insist upon them. Among those measures, I would by no means include any payments beyond those stipulated for in the treaty of 1842.

Very respectfully, your obedient servant,

T. HARTLEY CRAWFORD.

Hon. J. M. PORTER, *Secretary of War.*

Report approved. J. M. PORTER.

No. 4.

WAR DEPARTMENT,
Office Indian Affairs, May 5, 1843.

SIR: The implied order contained in the act of Congress of July 17th, 1842, making an appropriation for negotiating with the Sacs and Foxes and Winnebagoes, remains unexecuted with the latter. This duty is further enjoined by the present condition of those Indians. They are, from proximity to the Mississippi river, and the right they possess under the treaty of 1837 to hunt up to the river, exposed in a remarkable manner to the destructive influences of white association, and especially to the traffic in whiskey, which is rapidly effecting their extinction. Accounts of outrages practised upon or by them are frequent, and late most dreadful murders, perpetrated by three of them upon two white men and a boy, and the very severe if not mortal wounding of another boy and a girl, accompanied by a crime almost unheard of among Indians, (the violation of the person of a girl not more than eight or nine years of age,) are too revolting to be dwelt upon. A continuation of this state of things cannot be permitted. Unless the Winnebagoes are removed, the result must be collisions between our citizens and them, attended with consequences that it is shocking to contemplate, and their speedy extermination must follow. These evils admit of but one remedy—the acquisition of their possessions, and their removal to a residence remote from the causes of existing disquietudes.

It is important that you should hold this contemplated meeting with them as early as conveniently practicable. It is not unlikely that the fact of such a measure being in contemplation will have the effect of allaying the excitement that is said to exist in their neighborhood, and that the commission of such crimes by them will prevent such opposition as the officers of the Government frequently encounter in their efforts to treat with Indian tribes. There must be a desire to get rid of this population, now so disadvantageously situated for all parties.

The number of acres possessed by them on the neutral ground, as well as the temporary occupation of them clearly indicated in the treaty of 1837, together with all the unfavorable circumstances that surround and press upon them, are proper for consideration in fixing the price to be paid for a cession of all rights that remain to them between the Mississippi and Missouri rivers. Taking the treaty made with the Sacs and Foxes last fall as a guide, $150,000 would seem to be an ample consideration. The Winnebagoes hold about 1,500,000 acres. The Sacs and Foxes hold about 10,000,000 acres of land, at least as valuable and desirable, for which we contracted to pay an interest of five per cent. on $800,000, and to discharge their debts, amounting to $258,566 34.

These Indians numbered last autumn 2,183, and received annually from the United States, in money, goods, provisions, and various beneficial objects, the very large sum of $92,860. This is an immense Indian fund, considered in reference to their number and wants, and to its amount may probably be traced their present miserable condition, regarding idle and dissipated habits, dispensing with exertions or self-dependence. This does not the less entitle them to what is just for yielding their possessions, but may be a good reason for confining the consideration within as small limits as may be consistent with strict justice. I have sometimes thought and reflected upon the propriety of reducing the consideration given for Indian lands, as the band declines when this does happen, in spite of every exertion. It would not perhaps be unjust; for the fee simple of the land being in the United States, the possessory right of the Indians would have become less valuable, if they had continued to occupy it, as they diminished in number; and the treaty provisions being as much for their support and advancement in civilization as for a compensation, the maintenance of the same proportion of benefit might be considered a just feature in a treaty. There are, however, so many difficulties in the way, that I have not deemed it good policy to suggest such a course; and considering that the principle would apply only to a few tribes, and that we shall not, for a long time to come, desire to make more than two or perhaps three additional Indian treaties, it is suggested to you, not as the basis of any action now, but merely thrown out in connexion with the very liberal provision already made for the Winnebagoes.

Their land extends from a line twenty miles west of the Mississippi to the eastern branch of the Red Cedar creek, as the same was granted to them by the treaty of 15th September, 1832, except that they receded twenty miles west of the Mississippi, by the treaty of the 1st November, 1837, retaining the right to hunt on them, which they acquired by the same instrument as to the western part of the neutral ground, until they shall procure a permanent settlement.

A resolution was passed on the 3d day of March last, by the Senate of the United States, prohibiting the making of reservations of land and provisions for the payment of debts in the future negotiation of Indian treaties, of which I herewith transmit you a copy, as excluding the two features referred to.

The act of Congress appropriating a sum of money for treating with the Winnebagoes includes with them only the Sacs and Foxes of Mississippi. But the Secretary of War is of opinion that we may negotiate with the Sioux for the future residence of the Winnebagoes on their land, or for the purchase of a tract of land for the Winnebagoes from the Sioux, as a matter incident and indispensable to the completion of a treaty with the Winnebagoes. If a residence is merely provided for them, no particular spot need be designated; but if the Sioux will only accommodate the Winnebagoes with a separate tract, to be bought from them, a suitable location must be fixed on—the more remote and secluded from the malign influence of white association the better. If to be had, I should suppose that in the neighborhood of the Blue Earth would be suitable. But I do not mean to bind you to that or any particular location, but trust to your information, or means of acquiring it on the spot, for a good selection. The quantity will be proportioned to their number. I think from 400,000 to 500,000 acres would be a liberal allowance for them. The consideration of the permission to reside among the Sioux, or of a purchase, as the case may turn out, must be borne by the Winnebagoes out of the consideration stipulated to be paid them for their interest in the neutral ground or out of their present annuities; and so must the expenses of their removal and subsistance for a year, or less, if either or both are desired by them.

A letter from you, dated the 18th March last, enclosing a copy of one from Major Amos J. Bruce, Sioux agent, of the 21st February, 1843, (to both of which, being on your files, I refer you,) states that "the Sioux would probably be unwilling that the Winnebagoes should settle among them, owing, as the agent thinks, to the improper interference of white persons. He however mentions that Dr. Williamson, who has resided for a number of years at *Lac qui Parle*, and who is acquainted with them, (the Sioux,) is of opinion that they should sell a part of their lands to the Government, and also that they would prefer that the Winnebagoes should settle on it, in preference either to the whites or other Indians." This leaves the matter in doubt, but creates the probability that an arrangement may be made with the Sioux, by purchase or otherwise, by which a future home can be had for the Winnebagoes. I am at a loss to know what other plan can be fallen on—the understanding being that these Indians will not go southwest or west of the Missouri river, though what reasonable objection they can make to such a residence I cannot perceive. The climate is better, though not so far south at the northern extremity of the region the United States own, unencumbered by Indian title, as to be exceptionable on that score; the land is represented to be very good, and distance not very great. Perhaps, if these things were properly represented to them, they would consent to remove there. These, and any other reasons that may occur to you, you will please to present to them in council; if they decline acceding to the proposition, the Sioux arrangement is the only alternative that remains.

In effecting the latter, if necessary, I think the better plan would be to embrace the whole in one instrument, a tripartite treaty, to which the United States, the Winnebagoes, and the Sioux, would be the parties.

If they will agree to further provisions than now exist for schools, &c., it would be a gratifying circumstance, of which you will avail yourself. They now receive a large amount in goods and provisions, which might be benevolently and judiciously enlarged, for whatever they receive in cash is generally wasted.

* * * * * * * * *

Very respectfully, your most obedient servant,

T. HARTLEY CRAWFORD.

His Excellency JOHN CHAMBERS,
Burlington, Iowa.

Extract from the report of His Excellency Governor Chambers, dated Burlington, Iowa, 29th July, 1843.

At the time appointed, their principal men, (the Winnebagoes,) with one or two exceptions, having assembled, and a considerable portion of the tribe being in attendance, I met them in council, and must beg permission to refer you, for the details of what transpired then, to the report of the secretary.

I found these Indians in the condition which the reports of the sub-agent and all information obtained from other sources had prepared me to expect. They have no principal chief or influential man among them; each separate village or lodge has, however, one man whom they call chief, who does not pretend to exercise any authority or influence beyond the few families who reside with him. These petty chiefs are in almost every instance found to be the most inveterate drunkards of their respective bands, and consequently have neither power nor influence over their young men.

The character of the tribe is such as might be expected to result from such a state of things, and their habits are bad in the extreme. Drunkenness is almost universal among them; they hunt very little, and consequently depend entirely upon the annuities paid them by the Government, in money, provisions, and clothing, and their crops of corn, the cultivation of which, both in quantity and the labor bestowed upon it, are in striking contrast with their bad habits; they have several hundred acres under cultivation at different villages, and most of it is well attended, and promises an abundant yield for so high a northern latitude; and I learn from the sub-agent and the superintendent of their farms, that, except the ploughing, the cultivation has been principally done by the Indians. I state this as exhibiting the only redeeming trait I could discover in the character of the tribe.

You will observe in the report of my secretary that but one of the chiefs addressed me in the course of the negotiation, and that he manifested from the commencement a sort of non-committal diplomacy, which renders it difficult to determine whether it was the result of cunning or stupidity. His interminable details of what their great father had said to them at Washington seemed to be used as an argument against their removal; at the same time, it was difficult to extract from him a direct refusal of the tribe to leave their present residence, which nothing but a pretty severe rebuke for his prevarication brought out at last.

These Indians, like all others that have been subjected to the influence of the licensed traders, can only be operated upon through that influence; and in no case can it be brought into action in support of the views of the Government, but for a "consideration," which has heretofore been, as you are well aware, obtained through a treaty stipulation for the payment of the claims against the tribe to be treated with. The resolution of the Senate of the last session, which accompanied your instructions for negotiating the contemplated treaty with these Indians, forbids a resort to this customary means of securing the co-operation of this influence; and the consequence was, its neutrality or secret opposition; and you will pardon me for venturing the prediction, that, under the operation of that resolution, no future treaty will ever be effected with any tribe of Indians with which licensed traders are to be found, without their interest is consulted in some other form than that to which they have been accustomed. The tremendous profits of Indian trade, resulting from the privileges granted the traders by the Government under the existing system of trade and intercourse with the Indians, does not seem to produce on the part of these people the least sense of obligation to forward or promote the views of the Government, or even to abstain from obstructing them when the promotion of their own interest is not presented as an inducement.

Nor is it at all probable that their omnipotent influence would be yielded upon any other consideration, even to save a suffering frontier from outrages such as the Winnebagoes have recently committed, and may be expected to repeat.

The principle indicated by the resolution of the Senate is undoubtedly a correct one, and it is to be regretted that it had not long since been incorporated into the system of intercourse and trade with the Indian tribes; but it is, in my humble opinion, equally to be regretted that it should have been introduced at a time when but very few (and those comparatively unimportant) treaties, with a view to the extinguishment of the Indian title to lands, remain to be made. The further continuance of the practice could add but little to the aggregate of the evils which have resulted from it, and its discontinuance may, and probably will, involve the Government in the necessity of chastising and removing the Winnebagoes, by military force, at a heavy expense of blood and treasure. The department will pardon me for availing myself of this occasion to repeat my formerly expressed opinion that the whole system of trade and intercourse with the Indian tribes is radically wrong, the great source of ruin to the Indians, and creative of a power and influence over them which has grown stronger than the power from which it is derived, and attended in various ways with immense expense to the Government, and gross imposition upon the Indians.

The traders have in their employment the best interpreters, frequently half breeds, and numerous clerks and adroit individuals, familiar with the vices and follies of the Indians, and always administering to them, not unfrequently raising children by their women, and thus making the impression upon the Indians that they are identified with them and their interests in all respects; hence the enormous waste of lands reserved by the different tribes for their half breeds, and the large sums of money paid to that class, to conciliate them and their white relations, when treaties are to be made.

You will observe that, in the offer of a consideration to the Indians for their removal, I proposed a less sum than your instructions would have authorized, which I was induced to do from having satisfied myself that ten thousand dollars would be ample for the expenses of their removal to the region of the St. Peter's as high up as the Blue Earth river, and that the remaining sum of ninety thousand dollars would be more than sufficient to obtain a cession of land from the Sioux for their residence. I was influenced, too, in naming the sum, by the wish to reserve a sum upon which to vary the proposition, if I found them disposed to come to terms; but you will observe that they made no objection or even a reference to the sum proposed. The suggestion of Wa-kon, (the speaker of the tribe,) towards the close of the negotiation, that if a purchase was made for them in the Sioux country, they would then decide whether they would accept it, was, I have no doubt, a mere evasion, dictated to them by some of their "white friends" who are interested in keeping the tribe near them.

Pending the negotiation with the Indians, a very large proportion of them were attacked with "influenza," and I am myself only now recovering from a very severe attack of it, attended with severe inflammation of the lungs.

I deem it proper to say, in the conclusion of this report, that the neutral ground, from the Mississippi river to the sub-agency and Fort Atkinson, a distance of fifty miles, (perhaps forty in a direct line,) is a most magnificent tract of country—high, rich (and slightly sandy) prairie, with a sufficiency of timber, and interspersed with numerous running springs of the purest water.

At the suggestion of Captain Sumner, of the dragoons, commanding at Fort Atkinson, I requested that a guard of his company should, pending the assembly and dispersion of the Indians, be kept near the boundary, where there were some notorious whiskey shops, from which the Indians would have been supplied with the means of keeping drunk while in council. The effect was a good one. A small guard of infantry, under the command of Captain Abercrombie, were encamped on the treaty ground, and preserved good order. To the attention of these excellent officers, and the politeness of their subordinates, during my stay in the Indian country, I am greatly indebted.

No. 5.

Statement showing the amount drawn between the 1*st of October,* 1842, *and the* 30*th September,* 1843, *inclusive, on account of appropriations for the service of the Indian department for the year* 1841.

Heads of account.	Amo't drawn between 1st Oct., 1842, and 30th Sept., 1843, inclusive.
Pay of superintendent and Indian agents	$1,375 00
Pay of sub-agents	125 00
Pay of interpreters	151 50
Building at agencies and repairs	1,033 00
Contingencies Indian department	198 87
Fulfilling treaties with Ottowas and Chippewas	1,000 00
Fulfilling treaties with Osages	30
Fulfilling treaties with Pawnees	2 00
Civilization of Indians	300 00
For removal, &c., of such Seminole Indians as surrender for emigration	2,018 10
	6,203 77

Statement showing the amount drawn between the 1*st October,* 1842, *and the* 30*th September,* 1843, *inclusive, on account of appropriations for the service of the Indian department for the year* 1842.

Heads of account.	Amo't drawn between 1st Oct., 1842, and 30th Sept., 1843, inclusive.
Pay of superintendent and Indian agents	$8,625 00
Pay of sub-agents	5,895 95
Pay of interpreters	5,575 00
Provisions for Indians	678 02
Building at agencies and repairs	1,140 00
Pay of clerk to superintendent Indian affairs south of Missouri	500 00
Compensation of a clerk in the office of the superintendent Indian affairs at St. Louis	300 00
Contingencies Indian department	13,434 12
Fulfilling treaties with Chippewas of Mississippi	1,000 00
Fulfilling treaties with Chippewas of Saganaw	1,500 00
Fulfilling treaties with Chippewas, Menomonies, Winnebagoes, and New York Indians	750 00
Fulfilling treaties with Choctaws	8,813 00
Fulfilling treaties with Creeks	4,223 99
Fulfilling treaties with Chickasaws	2,087 27
Fulfilling treaties with Cherokees	2,280 00
Fulfilling treaties with Delawares	1,800 00
Fulfilling treaties with Florida Indians	881 13
Fulfilling treaties with Kickapoos	250 00
Fulfilling treaties with Kanzas	360 00

STATEMENT—Continued.

Heads of account.	Amo't drawn between 1st Oct., 1842, and 30th Sept., 1843, inclusive.
Fulfilling treaties with Miamies	$787 05
Fulfilling treaties with Menomonies	720 00
Fulfilling treaties with Omahas	360 00
Fulfilling treaties with Ottowas and Chippewas	8,755 00
Fulfilling treaties with Otoes and Missourias	1,210 00
Fulfilling treaties with Osages	5,297 01
Fulfilling treaties with Pottawatomies	2,072 32
Fulfilling treaties with Pottawatomies of Indiana	1,362 38
Fulfilling treaties with Pawnees	1,700 00
Fulfilling treaties with Quapaws	729 00
Fulfilling treaties with Sioux of Mississippi	4,471 30
Fulfilling treaties with Yancton and Santie Sioux	360 00
Fulfilling treaties with Sacs and Foxes of Mississippi	1,640 00
Fulfilling treaties with Shawnees	840 00
Fulfilling treaties with Senecas and Shawnees	420 00
Fulfilling treaties with Senecas	720 00
Fulfilling treaties with Wyandots	360 00
Fulfilling treaties with Winnebagoes	7,962 12
Fulfilling treaties with Miamies—treaty 28th November, 1840	2,969 48
Medals to Indian chiefs	751 71
Expenses of holding treaties with Sac and Fox, Winnebago, and Sioux Indians	1,650 00
Expenses of treating with Camanches and other wild tribes, &c.	460 00
Civilization of Indians	6,532 50
Holding treaty with Wyandots of Ohio	862 39
Compensation to two commissioners to examine claims under Cherokee treaty of 1835	8,739 13
Arrearages of the late board of commissioners under Cherokee treaty of 1835	1,558 00
Carrying into effect treaty with Wyandots of 17th March, 1842	49,574 34
Interest on investments, &c., due Chippewas, Ottowas, and Pottawatomies, and reimbursable	5,600 00
Interest on investments, &c., due Chippewas and Ottowas, and reimbursable	180 00
Contingent expenses of commissioners to adjust claims to Choctaw reservations, renewed by act 23d August, 1842	3,035 00
	181,767 21

Statement showing the amount appropriated for the service of the Indian department for the half calendar year beginning on the 1st day of January and ending on the 30th day of June, 1843, *and the amount drawn thereon to the 30th June*, 1843, *inclusive, and the balances remaining undrawn.*

Heads of account.	Specified objects.	Amo't appropriated for the half calendar year beginning 1st January and ending 30th June, 1843.	Total am't appropriated.	Amount drawn thereon to 30th June, 1843, inclusive.	Total amount drawn.	Balances remaining undrawn.
Fulfilling treaties with various Indian tribes, viz:						
Christian Indians - - - -	Permanent annuity - -	$400 00	$400 00	$400 00	$400 00	
Chippewas of Mississippi - - -	Payment in money - -	9,500 00				
Do - - -	Payment in goods - - -	19,000 00				
Do - - -	Establishing 3 blacksmiths' shops, &c.	2,000 00				
Do - - -	Support of farmers, &c. - -	500 00				
Do - - -	Purchase of provisions - -	2,000 00				
Do - - -	Purchase of tobacco - -	500 00	33,500 00	33,500 00	33,500 00	
Chippewas of Saganaw - - -	Permanent annuity - -	2,800 00				
Do - - -	Support of blacksmith at Saganaw, &c.	1,500 00				
Do - - -	Education - - - -	500 00	4,800 00	4,550 00	4,550 00	$250 00
Chippewas, Menomonies, Winnebagoes, and New York Indians - - -	Education - - - -	750 00	750 00	750 00	750 00	
Chippewas, Ottowas, and Pottawatomies -	Permanent annuity - - -	16,000 00				
Do do do -	Limited annuity - - -	14,000 00				
Do do do -	Limited annuity - - -	2,000 00				
Do do do -	Life annuity to three chiefs - -	700 00				
Do do do -	Blacksmith and assistant - -	360 00				
Do do do -	Iron, steel, &c., for shop - -	220 00				
Do do do -	Purchase of salt - - -	250 00	33,530 00	33,530 00	33,530 00	

STATEMENT—Continued.

Heads of account.	Specified objects.	Amo't appropriated for the half calendar year beginning 1st January and ending 30th June, 1843.	Total amo't appropriated.	Amount drawn thereon to 30th June, 1843, inclusive.	Total amount drawn.	Balances remaining undrawn.
Choctaws - - - - -	Permanent annuity - - -	$3,000 00	$39,640 00	$28,640 00	$28,640 00	$11,000 00
Do - - - - -	Permanent annuity - - -	600 00				
Do - - - - -	Permanent annuity - - -	6,000 00				
Do - - - - -	Life annuity to a chief - -	150 00				
Do - - - - -	Life annuity to three chiefs - -	750 00				
Do - - - - -	Limited annuity - - -	20,000 00				
Do - - - - -	Life annuity to two Wayne warriors	50 00				
Do - - - - -	Blacksmith, &c. - - -	300 00				
Do - - - - -	Iron and steel - - -	320 00				
Do - - - - -	Three blacksmiths, &c. - -	1,260 00				
Do - - - - -	Iron and steel - - -	960 00				
Do - - - - -	Education of forty youths, &c. -	6,250 00				
Creeks - - - - -	Permanent annuity - - -	1,500 00				
Do - - - - -	Permanent annuity - - -	3,000 00				
Do - - - - -	Permanent annuity - - -	20,000 00				
Do - - - - -	Limited annuity - - -	10,000 00				
Do - - - - -	Life annuity to two chiefs - -	300 00				
Do - - - - -	Blacksmith, &c. - - -	420 00				
Do - - - - -	Iron and steel - - -	270 00				
Do - - - - -	Two blacksmiths, &c. - -	840 00				
Do - - - - -	Iron and steel - - -	540 00				
Do - - - - -	Two blacksmiths, &c. - -	420 00				
Do - - - - -	Iron and steel - - -	270 00				
Do - - - - -	Wheelwright, &c. - - -	300 00				
Do - - - - -	Wheelwright or wagon maker -	300 00				

Do	Agricultural implements	2,000 00				
Do	Education	1,500 00				
Do	Education	500 00				
Do	Interest on $350,000, at 5 per cent.	17,500 00	59,660 00	58,846 34	58,846 34	813 66
Chickasaws	Permanent annuity	3,000 00				
Do	Education	1,000 00	4,000 00	170 32	170 32	3,829 68
Cherokees	Four blacksmiths, &c.	1,680 00				
Do	Iron and steel	1,080 00				
Do	Wagon maker	300 00				
Do	Wheelwright	300 00	3,360 00	3,360 00	3,360 00	
Delawares	Permanent annuity	1,000 00				
Do	Permanent annuity	500 00				
Do	Permanent annuity	4,000 00				
Do	Permanent annuity	1,000 00				
Do	Life annuity to two chiefs, &c.	200 00				
Do	Life annuity to three chiefs, &c.	300 00				
Do	Purchase of salt	100 00				
Do	Blacksmith, &c.	360 00				
Do	Iron and steel	220 00				
Do	Interest on $46,080, at 5 per cent.	2,304 00	9,984 00	7,680 00	7,680 00	2,304 00
Florida Indians	Limited annuity	4,610 00				
Do	Blacksmith, &c.	500 00				
Do	Education	500 00	5,610 00	5,364 61	5,364 61	245 39
Iowas	One year s int'st on $157,500, at 5 p. c.	7,875 00	7,875 00	7,875 00	7,875 00	
Kickapoos	Limited annuity	5,000 00	5,000 00	5,000 00	5,000 00	
Kanzas	Limited annuity	3,500 00				
Do	Blacksmith, &c.	360 00				
Do	Iron and steel	220 00				
Do	Agricultural assistance	800 00	4,880 00	4,880 00	4,880 00	
Miamies	Permanent annuity	25,000 00				
Do	Sixth of ten instalments	10,000 00				
Do	Fifth of ten instalments	12,568 00				

STATEMENT—Continued.

Heads of account.	Specified objects.	Amo't appropriated for the half calendar year beginning 1st January and ending 30th June, 1843.	Total amo't appropriated.	Amount drawn thereon to 30th June, 1843, inclusive.	Total amount drawn.	Balances remaining undrawn.
Choctaws	Permanent annuity	$3,000 00				
Do	Permanent annuity	600 00				
Do	Permanent annuity	6,000 00				
Do	Life annuity to a chief	150 00				
Do	Life annuity to three chiefs	750 00				
Do	Limited annuity	20,000 00				
Do	Life annuity to two Wayne warriors	50 00				
Do	Blacksmith, &c.	300 00				
Do	Iron and steel	320 00				
Do	Three blacksmiths, &c.	1,260 00				
Do	Iron and steel	960 00				
Do	Education of forty youths, &c.	6,250 00	$39,640 00	$28,640 00	$28,640 00	$11,000 00
Creeks	Permanent annuity	1,500 00				
Do	Permanent annuity	3,000 00				
Do	Permanent annuity	20,000 00				
Do	Limited annuity	10,000 00				
Do	Life annuity to two chiefs	300 00				
Do	Blacksmith, &c.	420 00				
Do	Iron and steel	270 00				
Do	Two blacksmiths, &c.	840 00				
Do	Iron and steel	540 00				
Do	Two blacksmiths, &c.	420 00				
Do	Iron and steel	270 00				
Do	Wheelwright, &c.	300 00				
Do	Wheelwright or wagon maker	300 00				

Do	Agricultural implements	2,000 00				
Do	Education	1,500 00				
Do	Education	500 00				
Do	Interest on $350,000, at 5 per cent.	17,500 00	59,660 00	58,846 34	58,846 34	813 66
Chickasaws	Permanent annuity	3,000 00				
Do	Education	1,000 00	4,000 00	170 32	170 32	3,829 68
Cherokees	Four blacksmiths, &c.	1,680 00				
Do	Iron and steel	1,080 00				
Do	Wagon maker	300 00				
Do	Wheelwright	300 00	3,360 00	3,360 00	3,360 00	
Delawares	Permanent annuity	1,000 00				
Do	Permanent annuity	500 00				
Do	Permanent annuity	4,000 00				
Do	Permanent annuity	1,000 00				
Do	Life annuity to two chiefs, &c.	200 00				
Do	Life annuity to three chiefs, &c.	300 00				
Do	Purchase of salt	100 00				
Do	Blacksmith, &c.	360 00				
Do	Iron and steel	220 00				
Do	Interest on $46,080, at 5 per cent.	2,304 00	9,984 00	7,680 00	7,680 00	2,304 00
Florida Indians	Limited annuity	4,610 00				
Do	Blacksmith, &c.	500 00				
Do	Education	500 00	5,610 00	5,364 61	5,364 61	245 39
Iowas	One year s int'st on $157,500, at 5 p. c.	7,875 00	7,875 00	7,875 00	7,875 00	
Kickapoos	Limited annuity	5,000 00	5,000 00	5,000 00	5,000 00	
Kanzas	Limited annuity	3,500 00				
Do	Blacksmith, &c.	360 00				
Do	Iron and steel	220 00				
Do	Agricultural assistance	800 00	4,880 00	4,880 00	4,880 00	
Miamies	Permanent annuity	25,000 00				
Do	Sixth of ten instalments	10,000 00				
Do	Fifth of ten instalments	12,568 00				

STATEMENT—Continued.

Heads of account.	Specified objects.	Amo't appropriated for the half calendar year beginning 1st January and ending 30th June, 1843.	Total amo't appropriated.	Amount drawn thereon to 30th June, 1843, inclusive.	Total amount drawn.	Balances remaining undrawn.
Miamies	Second of twenty instalments	$12,500 00				
Do	Blacksmith, &c.	360 00				
Do	Iron and steel	220 00				
Do	1,000 lbs. tabacco, 2,000 lbs. iron, and 1,000 lbs. steel	770 00				
Do	Miller in lieu of gunsmith	300 00				
Do	160 bushels salt	320 00				
Do	Agricultural assistance	200 00				
Do	Payment in lieu of laborers	250 00				
Do	Education and support of poor, &c.	1,500 00	$63,988 00	$63,613 70	$63,613 70	$374 30
Eel Rivers, (Miamies)	Permanent annuity	500 00				
Do	Permanent annuity	250 00				
Do	Permanent annuity	350 00	1,100 00	1,100 00	1,100 00	
Menomonies	Limited annuity	6,000 00				
Do	Limited annuity	20,000 00				
Do	Blacksmith, &c.	720 00				
Do	Iron and steel	440 00				
Do	Provisions	3,000 00				
Do	2,000 lbs. tobacco	300 00				
Do	30 barrels salt	150 00				
Do	Farming utensils, &c.	500 00	31,110 00	31,110 00	31,110 00	
Omahas	Blacksmith, &c.	360 00				
Do	Iron and steel	220 00				

Do		Agricultural implements	500 00	1,080 00	1,080 00	1,080 00	
Ottowas and Chippewas		Limited annuity	30,000 00				
Do	do	Interest on $200,000	12,000 00				
Do	do	Seventh of ten instalments	500 00				
Do	do	Education	2,500 00				
Do	do	Missions	1,500 00				
Do	do	Vaccine matter, medicines, & physicians	300 00				
Do	do	Provisions	2,000 00				
Do	do	Tobacco, 6,500 lbs.	975 00				
Do	do	Barrels salt, 100	350 00				
Do	do	Fish barrels, 500	750 00				
Do	do	Three blacksmiths, &c.	1,080 00				
Do	do	Iron and steel	660 00				
Do	do	Gunsmith at Mackinac	300 00				
Do	do	Iron and steel	220 00				
Do	do	Keeper of dormitory and 150 cords wood	750 00				
Do	do	Two farmers, &c.	800 00				
Do	do	Two mechanics	600 00	55,285 00	50,610 00	50,610 00	4,675 00
Otoes and Missourias		Limited annuity	2,500 00				
Do	do	Blacksmith, &c.	360 00				
Do	do	Iron and steel	220 00				
Do	do	Agricultural implements	500 00				
Do	do	Education	250 00				
Do	do	Two farmers	600 00	4,430 00	4,430 00	4,430 00	
Osages		Limited annuity	20,000 00				
Do		Interest on $69,120, at 5 per cent	3,456 00				
Do		Support of two smiths' establishments	1,000 00				
Do		Two millers	600 00				
Do		Two assistants to millers	225 00				
Do		Cows, calves, & hogs, ploughs, gears, &c.	7,300 00	32,581 00	32,319 74	32,319 74	261 26
Ottowas		Permanent annuity	1,000 00				
Do		Permanent annuity	800 00				
Do		Permanent annuity	1,500 00				
Do		Permanent annuity	1,000 00	4,300 00	4,300 00	4,300 00	

STATEMENT—Continued.

Heads of account.	Specified objects.	Amo't appropriated for the half calendar year beginning 1st January and ending 30th June, 1848.	Total amo't appropriated.	Amount drawn thereon to 30th June, 1848, inclusive.	Total amount drawn.	Balances remaining undrawn.
Pottawatomies - - - -	Permanent annuity - - -	$1,000 00				
Do - - - -	Permanent annuity - - -	500 00				
Do - - - -	Permanent annuity - - -	2,500 00				
Do - - - -	Limited annuity - - -	2,000 00				
Do - - - -	Permanent annuity - - -	2,000 00				
Do - - - -	Limited annuity - - -	1,000 00				
Do - - - -	Life annuity to a chief - -	100 00				
Do - - - -	Education - - - -	1,500 00				
Do - - - -	Salt - - - -	460 00				
Do - - - -	Blacksmiths, &c. - - -	1,160 00				
Do - - - -	Tobacco, iron, and steel - -	400 00				
Do - - - -	Three laborers - - -	180 00	$12,800 00	$12,800 00	$12,800 00	
Pattawatomies of Huron - - -	Permanent annuity - - -	400 00	400 00	400 00	400 00	
Pattawatomies of the Prairie - -	Limited annuity - - -	15,000 00				
Do do - - -	Life annuity to two chiefs - -	400 00	15,400 00	15,400 00	15,400 00	
Pattawatomies of the Wabash - -	Limited annuity - - -	20,000 00	20,000 00	20,000 00	20,000 00	
Pattawatomies of Indiana - - -	Limited annuity - - -	15,000 00				
Do do - - -	Education - - - -	1,000 00	16,000 00	15,045 74	15,045 74	$954 26
Piankeshaws - - - -	Permanent annuity - - -	800 00	800 00	800 00	800 00	
Pawnees - - - -	Limited annuity - - -	4,600 00				

Do	Education	500 00				
Do	Two blacksmiths, &c.	1,000 00				
Do	Agricultural implements	2,000 00	8,100 00	4,315 00	4,315 00	3,785 00
Quapaws	Limited annuity	2,000 00				
Do	Education	500 00				
Do	Blacksmith, &c.	420 00				
Do	Iron and steel	220 00				
Do	Farmer	300 00	3,440 00	2,940 00	2,940 00	500 00
Six Nations of New York	Permanent annuity	4,500 00	4,500 00	4,500 00	4,500 00	
Senecas of New York	Permanent annuity	6,000 00	6,000 00	6,000 00	6,000 00	
Sioux of Mississippi	Limited annuity	10,000 00				
Do do	Interest on $300,000, at 5 per cent.	15,000 00				
Do do	Purchase of medicines, &c.	4,125 00				
Do do	Blacksmith, &c.	640 00				
Do do	Agricultural implements	700 00				
Do do	Purchase of provisions, &c.	5,500 00	35,965 00	35,965 00	35,965 00	
Yancton and Santie Sioux	Blacksmith, &c.	580 00				
Do do	Agricultural assistance	400 00	980 00	-	-	980 00
Sacs and Foxes of Missouri	Interest on $157,400, at 5 per cent.	7,870 00	7,870 00	7,870 00	7,870 00	
Sacs and Foxes of Mississippi	Permanent annuity	1,000 00				
Do do	Limited annuity	20,000 00				
Do do	Limited annuity	10,000 00				
Do do	Interest on $200,000, at 5 per cent.	10,000 00				
Do do	Blacksmith, &c.	1,280 00				
Do do	Gunsmith, &c.	520 00				
Do do	Agricultural implements	800 00				
Do do	Salt, 40 barrels	200 00				
Do do	Tobacco, 40 kegs	600 00	44,400 00	44,400 00	44,400 00	
Shawnees	Permanent annuity	1,000 00				
Do	Permanent annuity	2,000 00				
Do	Limited annuity	2,000 00				
Do	Salt	60 00				

Heads of account.	Specified objects.	Amount appropriated for the half calendar year beginning 1st January and ending 30th June, 1843.	Total am't appropriated.	Amount drawn thereon to 30th June, 1843, inclusive.	Total amount drawn.	Balances remaining undrawn.
Shawnees - - - - -	Blacksmith, &c. - - -	$1,280 00	$6,340 00	$6,340 00	$6,340 00	
Senecas and Shawnees - - -	Permanent annuity - - -	1,000 00	1,640 00	1,640 00	1,640 00	
Do do - - -	Blacksmith, &c. - - -	640 00				
Senecas - - - - -	Permanent annuity - - -	1,000 00	1,940 00	1,940 00	1,940 00	
Do - - - - -	Blacksmith, &c. - - -	640 00				
Do - - - - -	Miller - - - -	300 00				
Wyandots - - - - -	Permanent annuity - - -	17,500 00	38,080 00	38,080 00	38,080 00	
Do - - - - -	Blacksmith, &c. - - -	580 00				
Do - - - - -	Payment for improvements abandoned	20,000 00				
Weas - - - - -	Permanent annuity - - -	3,000 00	3,000 00	3,000 00	3,000 00	
Winnebagoes - - - -	Limited annuity - - -	28,000 00	89,190 00	85,340 00	85,340 00	$3,850 00
Do - - - - -	Interest on $1,100,000, at 5 per cent.	55,000 00				
Do - - - - -	Salt, 50 barrels - - -	250 00				
Do - - - - -	Tobacco - - - -	525 00				
Do - - - - -	Blacksmith, &c. - - -	1,740 00				
Do - - - - -	Laborers and oxen - - -	245 00				
Do - - - - -	Education - - - -	1,500 00				
Do - - - - -	Six agriculturists, &c. - -	1,730 00				
Do - - - - -	Two physicians - - -	200 00				
			723,708 00	-	689,885 45	33,822 55

Statement showing the sums appropriated, per act of 3d *March*, 1843, *for other purposes than the foregoing, and the amount drawn thereon to the* 30*th June*, 1843, *and the balances remaining undrawn.*

Heads of account.	Specified objects.	Amount appropriated for the half calendar year beginning 1st January and ending 30th June, 1843.	Total am't appropriated.	Amount drawn thereon to 30th June, 1843, inclusive.	Total amount drawn.	Balances remaining undrawn.
Current expenses of the Indian department for the said half calendar year.	Pay of superintendent of Indian affairs at St. Louis, and Indian agents.	$8,250 00	$53,500 00	$52,109 52	$52,109 52	$1,390 48
Do do do -	Pay of clerk to superintendent, &c., at St. Louis.	600 00				
Do do do -	Pay of clerk to superintendent, &c., south of the Missouri.	500 00				
Do do do -	Pay of sub-agents - - -	6,500 00				
Do do do -	Pay of interpreters - - -	5,650 00				
Do do do -	Provisions for Indians - - -	7,000 00				
Do do do -	Contingencies Indian department -	25,000 00				
Payment of three drafts on the Government, by Governor Doty.	For goods, &c., delivered to Sioux Indians	13,776 49	13,776 49	13,776 49	13,776 49	
Removal of New York Indians, &c. -	Removal of 250 New York Indians west of the Mississippi.	20,477 50	20,477 50	-	-	20,477 50
Removal of Choctaws west of the Mississippi.	Removal of Choctaws west of the Mississippi.	67,490 00	67,490 00	10,000 00	10,000 00	57,490 00
Subsistence of Choctaw claimants, &c. -	For subsistence of Choctaw claimants and their Indian witnesses, &c.	15,000 00	15,000 00	5,000 00	5,000 00	10,000 00
Carrying into effect treaty with Chippewas of Mississippi.	Limited annuity - - -	12,500 00				

STATEMENT—Continued.

Heads of account.	Specified objects.	Amount appropriated for the half calendar year beginning 1st January and ending 30th June, 1843.	Total am't appropriated.	Amount drawn thereon to 30th June, 1843, inclusive.	Total amount drawn.	Balances remaining undrawn.
Carrying into effect treaty with Chippewas of Mississippi.	Payment in goods - - -	$10,500 00				
Do do do -	Purchase of tobacco and provisions -	2,000 00				
Do do do -	Support of two blacksmith shops, &c. -	2,000 00				
Do do do -	Pay of two farmers - - -	1,000 00				
Do do do -	Pay of two carpenters - - -	1,000 00				
Do do do -	Support of schools, &c. - -	2,000 00				
Do do do -	Payment of this sum as an agricultural fund, &c.	5,000 00				
Do do do -	Presents to half-breeds, &c. - -	15,000 00	$51,000 00	$44,100 00	$44,100 00	$6,900 00
Expenses of negotiating with Kanzas Indians, or other tribes on the Missouri, for a tract of land.	For the permanent residence of the Sacs and Foxes, &c.	1,500 00	1,500 00	450 00	450 00	1,050 00
Carrying into effect treaty with Sac and Fox Indians of 11th October, 1842.	Interest on $800,000, at 5 per cent., for the year 1843, less the sum of $1,000, agreed to be paid by the Indians for the improvements at the agency, &c.	39,000 00				
Do do do -	Compensation to a commissioner, and expenses of running the boundary line, and marking the same.	2,000 00				
Do do do -	Payment of the debts - - -	258,566 34	299,566 34	288,796 34	288,796 34	10,770 00
To satisfy contracts, by General Jesup, with the Creek Indians, in August, 1836.	For payment to Creek chiefs, &c., who served in Florida.	12,000 00	12,000 00	12,000 00	12,000 00	

Relief of Johnson Patrick	For boarding certain Pottawatomie chiefs, &c.	1,351 76				
			1,351 76	1,351 76	1,351 76	
			535,662 09	-	427,584 11	108,077 98
Civilization of Indians	- - - - - - -	10,000 00	10,000 00	-	1,802 50	8,197 50
			545,662 09	-	429,386 61	116,275 48

RECAPITULATION.

Heads and dates of appropriation, &c.	Total amount appropriated.	Total amount drawn.	Balances remaining undrawn.
Amount appropriated for fulfilling treaties with various Indian tribes for the half calendar year beginning on the 1st January and ending on the 30th June, 1843; and the amount drawn thereon to the 30th June, 1843; and the balances remaining undrawn, as per statement	$723,708 00	$689,885 45	$33,822 55
Amount appropriated for other purposes than the foregoing, per act 3d March, 1843; and the amount drawn thereon to the 30th June, 1843, inclusive; and the balances remaining undrawn, as per statement	535,662 09	427,584 11	108,077 98
Civilization of Indians	10,000 00	1,802 50	8,197 50
Total	1,269,370 09	1,119,272 06	150,098 03

No. 6.—*Statement exhibiting the amount of investments for Indian account in State stocks, &c.*

Names of the tribes for whose account the stock is held in trust.	Names of the States which issued the bonds.	Rate of interest, p. ct.	Amount of each lot of bonds.	Aggregate amount of the bonds for each tribe.	Amount of the annual interest on each.	Aggregate amount of the annual interest for each tribe.	Amount of the cost of each lot of bonds.	Aggregate cost of the bonds for each tribe.	When the interest is payable.	Where the interest is payable.	Where the interest is deposited until wanted for application.	Treaties, on reference to which it may be seen for what objects the interest is to be applied.
Cherokees -	Kentucky -	5	$94,000 00	-	$4,700 00	-	$94,000 00	-	Semi-annually.	Philadelphia	Treasury U. States.	Treaty Dec., 1835, and suppl't Mar. 7, 1836.
Do -	Tennessee -	5	250,000 00	-	12,500 00	-	250,000 00	-	Do	Do -	Do -	Do do.
Do -	Alabama -	5	300,000 00	-	15,000 00	-	300,000 00	-	Do	New York -	Do -	Do do.
Do -	Maryland -	6	761 39	-	45 68	-	880 00	-	Quarterly	Baltimore -	Do -	Do do.
Do -	Michigan -	6	64,000 00	-	3,840 00	-	69,120 00	-	Semi-annually.	New York -	Do -	Do do.
				$708,761 39		$36,085 68		$714,000 00				
Cher. schools, (1819.)	Maryland -	5	41,138 00	-	2,056 90	-	42,490 00	-	Quarterly	Baltimore -	Do -	Treaty Feb. 27, 1819.
Do -	Missouri -	5½	10,000 00	-	550 00	-	10,000 00	-	Semi-annually.	New York -	Do -	Do do.
				51,138 00		2,606 90		52,490 00				
Chippewas, Ottowas, & Pottawatomies.	Maryland -	6	130,850 43	-	7,851 02	-	150,000 00	-	Quarterly	Baltimore -	Do -	Treaty Sept'ber, 1833, (mills.)
Do -	Indiana -	5	68,000 00	-	3,400 00	-	72,264 09	-	Semi-annually.	New York -	Do -	Do (education.)
Do -	Pennsyl'a -	5	23,000 00	-	1,150 00	-	19,895 00	-	Do	Philadelphia	Do -	Do (mills.)
Do -	Do -	5	5,300 00	-	265 00	-	4,364 50	-	Do	Do -	Do -	Do (mills.)
Do -	Do -	5	8,500 00	-	425 00	-	7,852 50	-	Do	Do -	Do -	Do (education.)
Do -	U. S. loan of 1841.	6	14,500 00	-	870 00	-	14,500 00	-	Quarterly	Washington	Do -	Do (mills.)
Do -	Do -	6	1,000 00	-	60 00	-	1,000 00	-	Do	Do -	Do -	Do (education.)
				251,150 43		14,021 02		269,876 09				
Incompetent Chickasaws.	Kentucky -	5	2,000 00	-	100 00	-	1,960 00	-	Semi-annually.	Louisville -	Do -	Treaty May, 1834.
Do -	Indiana -	5	3,000 00	-	150 00	-	3,000 00	-	Do	New York -	Do -	Do do.
				5,000 00		250 00		4,960 00				

Chickasaw orphans	Arkansas	5	10,000 00	-	500 00	-	10,000 00	-	Do	Do	Do	Do do.
Do	Pennsyl'a	5	2,000 00	-	100 00	-	1,730 00	-	Do	Philadelphia	Do	Do do.
Do	U. S. loan of 1841.	6	500 00	12,500 00	30 00	630 00	500 00	12,230 00	Quarterly	Washington	Do	Do do.
Shawnees	Maryland	6	29,341 50	-	1,760 49	-	83,912 40	-	Do	Baltimore	Do	Treaty August, 1831.
Do	Kentucky	5	1,000 00	-	50 00	-	980 00	-	Semi-annually.	New York	Do	Do do.
Do	U. S. loan of 1841.	6	2,000 00	32,341 50	120 00	1,930 49	2,000 00	36,892 40	Quarterly	Washington	Do	Do do.
Senecas	Kentucky	5	-	5,000 00	-	250 00	-	4,900 00	Semi-annually.	New York	Do	Treaty Feb., 1831.
Senecas and Shawnees.	Do	5	6,000 00	-	300 00	-	5,880 00	-	Do	Do	Do	Do do.
Do	Missouri	5½	7,000 00	13,000 00	385 00	685 00	7,121 87	13,001 87	Do	Do	Do	Do do.
Kanzas	Do	5½	18,000 00	-	990 00	-	18,000 00	-	Do	Do	Do	Treaty June, 1825, (schools.)
Do	Pennsyl'a	5	2,000 00	-	100 00	-	1,730 00	-	Do	Philadelphia	Do	Do (schools.)
Do	U. S. loan of 1841.	6	1,500 00	-	90 00	-	1,500 00	-	Quarterly	Washington	Do	Do (schools.)
Do	U. S. loan of 1843.	5	2,700 00	24,200 00	135 00	1,315 00	2,727 27	23,957 27	Semi-annually.	Do	Do	Do (schools.)
Creek orphans	Alabama	5	82,000 00	-	4,100 00	-	82,000 00	-	Do	New York	Do	Treaty March, 1832.
Do	Missouri	5½	28,000 00	-	1,540 00	-	28,487 48	-	Do	Do	Do	Do do.
Do	Pennsyl'a	5	16,000 00	-	800 00	-	13,840 00	-	Do	Philadelphia	Do	Do do.
Do	U. S. loan of 1841.	6	10,000 00	-	600 00	-	10,000 00	-	Quarterly	Washington	Do	Do do.
Do	U. S. loan of 1843.	5	13,700 00	149,700 00	685 00	7,725 00	13,838 37	148,165 85	Semi-annually.	Do	Do	Do do.
Menomonies	Kentucky	5	77,000 00	-	3,850 00	-	75,460 00	-	Do	New York	Do	Treaty Sept'ber, 1836.
Do	Pennsyl'a	5	9,500 00	-	475 00	-	8,217 50	-	Do	Philadelphia	Do	Do do.
Do	Do	5	2,500 00	-	125 00	-	2,017 50	-	Do	Do	Do	Do do.
Do	U. S. loan of 1841.	6	6,000 00	95,000 00	360 00	4,810 00	6,000 00	91,695 00	Quarterly	Washington	Do	Do do.

STATEMENT—Continued.

Names of the tribes for whose account the stock is held in trust.	Names of the States which issued the bonds.	Rate of interest, p. ct.	Amount of each lot of bonds.	Aggregate amount of the bonds for each tribe.	Amount of the annual interest on each.	Aggregate amount of the annual interest for each tribe.	Amount of the cost of each lot of bonds.	Aggregate cost of the bonds for each tribe.	When the interest is payable.	Where the interest is payable.	Where the interest is deposited until wanted for application.	Treaties, on reference to which it may be seen for what objects the interest is to be applied.
Chippewas & Ottowas.	Kentucky -	5	$77,000 00	-	$3,850 00	-	$75,460 00	-	Semi-annually.	New York -	Treasury U. States.	Treaty March, 1836.
Do -	Michigan -	5	3,000 00	-	180 00	-	3,000 00	-	Do	Do	Do -	Do do.
Do -	Pennsyl'a -	5	14,000 00	-	700 00	-	12,110 00	-	Do	Philadelphia	Do -	Do do.
Do -	Do -	5	2,200 00	-	110 00	-	1,802 50	-	Do	Do -	Do -	Do do.
Do -	U. S. loan of 1841.	6	3,500 00	-	210 00	-	3,500 00	-	Quarterly	Washington	Do -	Do do.
Do -	U. S. loan of 1843.	5	4,600 00	$104,300 00	230 00	$5,280 00	4,646 46	$100,518 96	Semi-annually.	Do -	Do -	Do do.
Choctaws -	Alabama -	5	-	500,000 00	-	25,000 00	-	500,000 00	Do	N. Orleans -	Do -	Convent'n with Chickasaws, Jan. 17, 1837.
Delawares -	U. S. loan of 1841.	6	-	9,000 00	-	540 00	-	9,000 00	Quarterly	Washington	Do -	Treaty 1829, and resolution Senate, 1838.
Osages -	Do -	6	13,060 00	-	780 00	-	13,000 00	-	Do	Do -	Do -	Treaty 1825, and resolution Senate, 1838.
Do -	U. S. loan of 1843.	5	7,400 00	20,400 00	370 00	1,150 00	7,474 74	20,474 74	Semi-annually.	Do -	Do -	Do do.
Choctaw orphans.	U. S. loan of 1841.	6	17,850 00	-	1,071 00	-	17,850 00	-	Quarterly	Do -	Do -	Treaty Sept'ber, 1830.
Do -	U. S. loan of 1843.	5	21,600 00	39,450 00	1,080 00	2,151 00	21,818 16	39,668 16	Semi-annually.	Do -	Do -	Do do.
Stockbridges & Munsees.	U. S. loan of 1841.	6	-	6,000 00	-	360 00	-	6,000 00	Quarterly	Do -	Do -	Treaty May, 1840.
				2,026,941 32	-	104,790 09	-	2,047,330 34				

WAR DEPARTMENT, OFFICE INDIAN AFFAIRS, *September* 30, 1843.

Statement exhibiting the annual interest appropriated by Congress to pay the following tribes of Indians, in lieu of investing the sums of money, provided by treaty, in stocks.

Names of the tribes.	Amount provided by treaty for investment.	Amount of interest annually appropriated.	Authority by which made.
Creeks - - - -	$350,000	$17,500	Treaty of November 23, 1838.
Delawares - - -	46,080	2,304	Treaty of 1832.
Iowas - - - -	157,500	7,875	Treaty of 1838.
Osages - - - -	69,120	3,456	Resolution of the Senate, January 19, 1838.
Chippewas and Ottowas - -	200,000	12,000	Resolution of the Senate.
Sioux of Mississippi - -	300,000	15,000	Treaty of September 29, 1837.
Sacs and Foxes of Missouri -	157,400	7,870	Treaty of October 21, 1837.
Sacs and Foxes of Mississippi -	200,000	10,000	Treaty of October 21, 1837.
Winnebagoes - - -	1,100,000	55,000	Treaty of November 1, 1837.
	2,580,100	131,005	

No. 7.

HOUSE OF REPRESENTATIVES,
January 16, 1843.

Mr. WELLER, from the Committee on Indian Affairs, reported the following bill:

A BILL declaratory of the first and second articles in the treaty made with the Chippewa Indians at Saganaw, in the State of Michigan, on the twenty-third day of January, anno Domini one thousand eight hundred and thirty-eight.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the first and second articles in the treaty made with the Chippewa Indians on the twenty-third of January, anno Domini one thousand eight hundred and thirty-eight, shall be so construed as to prevent the sales of the lands ceded by said treaty for a less sum than five dollars per acre previous to the first of September, anno Domini one thousand eight hundred and forty-three; and that the minimum price of said lands, from and after that date, shall be two dollars and fifty cents per acre: *Provided,* That if any of said lands shall remain unsold on the first of September, anno Domini one thousand eight hundred and forty-six, then they shall be sold for such sums as they will command, provided no such sale shall be made for a less sum than seventy-five cents per acre.

No. 8.

War Department,
Office Indian Affairs, August 18, 1843.

Sir: With reference to the present condition of the lands to be sold under the treaty of the 23d January, 1838, with the Chippewas of Saganaw, I have to request, as the bill "declaratory of the 1st and 2d articles in the treaty" made with the aforesaid Indians, reported by the Committee on Indian Affairs of the House of Representatives of the United States, on the 10th January, 1843, (see bill No. 663, 27th Cong. 3d sess.,) failed to become a law, that instructions may be given to suspend any further sale of those lands until legislative action can be had upon the subject by Congress. The interests of the Indians and the United States demand a postponement of the sale, and I respectfully suggest that measures be immediately adopted to prevent those interests from being sacrificed. I would respectfully submit, whether it is not expedient, after the 6th September next, for the period of three years, to hold the land subject to entry at $2 50 per acre. This course would be, I think, in accordance with the spirit of the 1st article of the treaty, which evidently intended to have reference to the date of the commencement of the first sale, viz: allow two years from the 6th September, the commencement of first sale, for the lands to be sold for $5 per acre, and three years thereafter; during which they should be sold, as far as practicable, at $2 50 per acre.

Very respectfully, your obedient servant,
T. HARTLEY CRAWFORD.

Thomas H. Blake, Esq.,
Commissioner General Land Office.

No. 9.

List of Indian schools, with their locations, and the number of scholars and teachers, including, so far as reports have been received, all that receive allowances from education annuities or the civilization fund.

Names of principals.	Tribe instructed.	Location.	Teachers.	Scholars.			Denomination.	Remarks.
				Boys.	Girls.	Total.		
MICHIGAN SUPERINTENDENCY.								
Bishop P. P. Lefevre	Ottowas	Arbre Croche	3	35	34	69	Catholic.	
Do.	Do.	La Croix	2	25	29	54	Do.	
Do.	Do.	Middletown	1	17	10	27	Do.	
Do.	Do.	Cheboygan	1	16	-	16	Do.	
Do.	Chippewas	Sault Ste. Marie	1	16	17	33	Do.	
Do.	Ottowas and Chippewas	Fox river	1	22	37	59	Do.	
Do.	Chippewas	Manistie	2	40	-	40	Do.	
Do.	Ottowas	Grand river	1	20	-	20	Do.	
Do.	Chippewas	Mackinac	1	40	-	40	Do.	
Do.	Do.	Point St. Ignace	1	30	-	30	Do.	
Rev. W. H. Brockway	Do.	Little rapids	3	18	19	37	Methodist.	
Do.	Do.	Ke-wa-we-non	3	16	16	32	Do.	
Rev. James Selkrig	Ottowas of Grand river	Griswold	1	12	6	18	Protestant Episcopal.	
Rev. L. Slater	Ottowas	Gull Prairie	1	38	-	38	Baptist.	
Rev. A. L. Bingham	Chippewas	Sault Ste. Marie	2	41	43	84	Do.	
Rev. Peter Dougherty	Chippewas of Grand Traverse.	Grand Traverse bay	1	35	16	51	Presbyterian.	
Rev. George A. Smith	Ottowas	Old Wing	1	24	6	30	A. B. C. F. M.	
WISCONSIN SUPERINTENDENCY.								
C. S. Hayward	Brotherton	Manchester	1	80	-	80		
John L. Seymour	Winnebagoes	Turkey river	4	49	35	84		
T. T. Vandenbrock	Menomonies	Green bay	1	28	18	46	Catholic.	

LIST—Continued.

Names of principals.	Tribe instructed.	Location.	Teachers.	Scholars.			Denomination.	Remarks.
				Boys.	Girls.	Total.		
J. W. Abrams - - -	Stockbridges - -	Stockbridge - -	1	13	2	15		
Rev. Solomon Davis - -	Oneidas - -	Duck creek - -	2	41	-	41	Protestant Episcopal.	
James R. Goodrich - -	Do. (Orchard party)	Green bay - -	1	20	-	20		
Rev. Sherman Hall - -	Chippewas - -	Lapointe - -	2	50	40	90	A. B. C. F. M.	
Rev. Samuel Spates - -	Do. - -	Sandy lake - -	2	50	-	50	Methodist.	
Rev. T. M. Fullerton - -	Do. - -	Fond du Lac -	2	52	-	52	Do.	
IOWA SUPERINTENDENCY.								
Samuel Denton - - -	Sioux - - -	Red Wing's village -	3	6	10	16	Swiss Mission Society.	
ST. LOUIS SUPERINTENDENCY.								
S. M. Irvin - - -	Iowas, Sacs, and Foxes	Great Nemaha -	1	24	18	42	Presbyterian.	
Rev. J. F. S. Verrcyett - -	Pottawatomies - -	Sugar creek - -	8	61	61	122	Catholic.	
Samuel Allis - - -	Pawnees - -	Pawnee country -	1	29	14	43	A. B. C. F. M.	
J. C. Berryman - - -	Various Northwest tribes	Fort Leavenworth -	4	69	47	116	Methodist - -	Manual labor.
Francis Baker - - -	Shawnees and others -	Do. -	3	10	4	14	Baptist.	
Rev. J. C. Micksh - -	Munsees and Delawares -	Westfield - -	2	13	12	25	Moravian.	
Rev. J. D. Blanchard - -	Delawares - -	Fort Leaveworth -	2	12	11	23	Baptist.	
Thomas H. Stanley - -	Shawnees and other tribes	Do. -	3	30	18	48	Quakers - -	Manual labor.
WESTERN SUPERINTENDENCY.								
Elisur Butler - - -	Cherokees - -	Fairfield - -	1	14	11	25	A. B. C. F. M.	
Jacob Hitchcock - - -	Do. - -	Dwight - -	2	-	47	47	Do.	
S. Foreman - - -	Do. - -	- - - -	About	500	-	-	- - - -	In 11 common schools.
S. G. Patterson - - -	Quapaws - -	Quapaws - -	1	16	-	16	Methodist.	
Rev. D. S. Butrick - -	Cherokees - -	Mount Zion - -	2	20	-	20		

Rev. R. D. Potts - - -	Choctaws - -	Pushmataha district -	1	27	12	39	Treaty.	
H. G. Rind - - -	Do. - -	Puckshenubbe district	1	17	4	21	Do.	
Jared Olmstead - - -	Do. - -	Norwalk - -	6	148	-	148	A. B. C. F. M. -	4 schools.
Samuel Worcester - -	Do. - -	Bethlehem - -	1	12	1	13		
Ebenezer Hotchkin - -	Do. - -	Good Water - -	1	14	10	24		
C. Kingsbury - - -	Do. - -	Pine Ridge - -	1	9	21	30	Do.	
Rev. Alfred Wright - -	Do. - -	Wheelock - -	2	4	48	52	Do.	
Anna Burnham - - -	Do. - -	Red river - -	1	13	17	39		
J. P. Kingsbury - - -	Do. - -	Mayhew - -	1	19	17	36		
W. N. Anderson - - -	Creeks - - -	Creek agency -	1	27	11	38		
J. R. Baylor - - -	Do. - -	Cussita Square -	1	35	-	35		
CHOCTAW ACADEMY.								
D. Vanderslice - - -	18 Pottawatomies, 5 Creeks, 1 Prairie du Chien, 23 Chickasaws, and 4 Chicagoes.	Scott county, Kentucky	3	48	-	48		
NEW YORK SUB-AGENCY								
Rev. Asher Wright - -	New York Indians -	Buffalo Creek reservat'n	4	73	58	131	A. B. C. F. M. -	4 schools.
Rev. Asher Bliss - - -	Do. - -	Cattaraugus - -	3	42	31	73	Do.	
G. Rockwood - - -	Do. - -	Tuscarora - -	1	20	24	44	Do.	
Rev. Augustus Warren - -	Do. - -	Tonawanda - -	1	40	-	40	Baptist.	
Anson Gleason - - -	Mohegans - -	Mohegan school -	2	10	9	19		

WAR DEPARTMENT, OFFICE INDIAN AFFAIRS.

SCHOOL REPORTS.

No. 10.

FRIENDS' SHAWNEE SCHOOL FOR INDIAN CHILDREN,
9th month 28, 1843.

RESPECTED FRIEND: Since our report of 9th mo., 1842, there have been 48 Indian children, that is, 30 boys and 18 girls, belonging to 4 tribes, viz: 20 boys and 10 girls, Shawnees; 6 boys and 3 girls, Stockbridges; 3 boys and 4 girls, Delawares; 1 boy and 1 girl, Ottowas—all between the ages of 5 and 18, who have received instruction at the Friends' Shawnee school. The average number for the past year, in consequence of sickness, has not exceeded 30. Ten of the above number have been received since the school year commenced; 5 of them had never been at school before; the remaining 5 had received instruction at other schools. During the year 10 have left, 4 are gone to school elsewhere, 5 returned to their friends, and one has settled. Of those returned to their friends, including the married one, 3 are educated sufficiently for common purposes, and are capable of doing business for themselves; the other two did not stay long enough to receive any real benefit. Of the remaining thirty-eight, 25 read, write, and cipher, understandingly; 19 have studied geography; and those reported last year as in the simple rules of arithmetic are now working in vulgar fractions; 11 read easy lessons and spell words of three syllables, and are studying the mental arithmetic, and two read the alphabet. Some attention has been given to the abbreviations, punctuation, and composition, &c. In addition to our regular school hours during the winter, we had an evening school, to exercise in spelling and mental arithmetic, and at the return of spring changed to the morning, that all those who are not otherwise engaged are employed in the school room until breakfast, when all assemble for family worship. We hold public meetings for worship twice a week, and a few Indians who are not of our family attend. At our first day school the past year, several of the children have committed to memory our Saviour's sermon on the mount; most, if not all, his parables, with divers other passages of the New Testament; also, many poems. The children are boarded, clothed, lodged, and taught, free of any expense to their friends; and we are daily confirmed in the opinion, that to train them to habits of industry and economy is a very essential branch of their education; and we have the satisfaction to observe an improvement in the minds and habits of our pupils in these respects.

The domestic affairs of the family have been successfully carried on by the girls, under the superintendence of Mary Stanley and her associate, Mary Crew. We have 212 acres under fence, one-half of which only is under cultivation, and is the labor of the boys, under the superintendence of Thomas Stanley and his assistant, John Steward; and, from estimates made, the proceeds arising from the farm the past year will defray the expenditure of the institution, except salaries and building.

The salaries of those who have been employed in carrying on the institution the past year have been about $800. We are enlarging and improving our buildings. The names of the officers at this time, and the situation they fill in the institution, are as follows: Thomas Stanley and

Mary Stanley, superintendents; John Steward, an assistant farmer; Mary Crew, assistant housekeeper; Thomas Wells and Hannah Wells, teachers.

Signed, in behalf of the institution, by

THOMAS H. STANLEY,
MARY W. STANLEY, } *Superintendents.*
THOMAS WELLS,
HANNAH WELLS, } *Teachers.*

No. 11.

Extract from a letter addressed to D. D. Mitchell, Esq., superintendent of Indian affairs, St. Louis, Missouri, by R. A. Calloway, Esq., Osage sub-agent, dated Osage Sub-Agency, September 1, 1843.

We have no missionary or other schools, of any description, amongst the Osages. In my report of last year, (page 127, Commissioner's report, 1842-'43,) I gave my opinion of a school for Osages. That opinion I have had no reasons to change, but many to confirm.

No. 12.

Extract from the annual report of W. P. Richardson, on the condition of the Missouri Sacs and Foxes, and the Iowa Indians, dated Great Nemaha Sub-Agency, October 4, 1843.

I have been deceived by them (the Missouri Sacs and Foxes) in relation to their sending their children to school—promising, whenever asked about it, that in a few days or weeks a number would be sent, and begging me not to put their teacher away, and not to let their great father know that they were not sending their children to school. It is useless, however, to disguise the fact, that they are averse to having their children educated, with the exception of about twenty families. I herewith enclose the resignation of the Rev. William Hamilton, who has held the appointment of teacher now for two years, without being able to effect any thing in the way of education among them. He has despaired of succeeding, and so have I. I do not think it worth while to make another nomination of teacher.

I beg leave to call your attention to the enclosed memorial, signed by the Sacs and Foxes, and sent to the President of the United States; also, to a talk held by me with the Sacs and Foxes. I do not pretend to give any opinion in relation to the justness of their claim, set up to a part of the Mississippi Sac and Fox annuity. The history of the Missouri Sacs and Foxes is familiar to all Missourians, and to none more than yourself. They should have a patient hearing and prompt reply to their prayer. This memorial, in my opinion, is a very important document; as the Indians, in it, make a proposition to appropriate their school funds to aid in erecting and supporting a manual labor boarding school at this place, upon condition that the Government pay them certain funds, which evidently are their own, and will be paid eventually. I would most earnestly recommend that their proposition be accepted and the conditions complied with, so that this fund may be secured to aid in establishing a manual labor boarding school. It is the only remaining hope of these misguided people. Will not the Government come forward and help, now that the Indians are making donations, and many of them very solicitous on the subject? I will not allow myself to doubt it. I have had this matter much at heart, though I never felt so sanguine as now. The Sacs, with all their aversion to sending their children to school, would send to an institution of this kind—at least some would, and others would fall into it directly. This tribe numbers this year three hundred and eighty-three.

* * * * * * *

It is painful to say that, notwithstanding the benevolent efforts of the pious missionaries located at this place, but little has been done towards christianizing them, (the Iowas,) or even in the way of education, with the exception of the few children living in the families heretofore alluded to. I am well satisfied that nothing will do them any effectual good but a manual labor boarding school. There is no hope for the men and squaws; nothing can be done now for them in the way of education; but there are a number of little children who might be saved from ruin by a proper course of manual and mental training. I beg leave to call your attention to what has been said by the Iowas, in two councils recently held by me with them, on the subject of a manual labor boarding school. There is no doubt of their anxiety on this subject. This tribe numbers this year five hundred.

No. 13.

Extract from school report of Samuel Allis, superintendent of school at Pawnee village.

It is not my intention (were I capable) to make a report that would read well and pass for the time being, but I shall endeavor to state the truth simply. It will be seen by my report that I have not made much progress the past year in teaching, but I have endeavored to spend my time to the best advantage and profit of the Pawnees.

Considerable part of my time has been spent in building my house and other necessary buildings, school house, &c., conversing with the Indians, assisting the farmers by laboring, and encouraging the Indians to become cultivators of their beautiful soil, &c. Schools at present are not encouraging, neither will be, until the Indians raise provisions sufficient for children to remain at their permanent homes; but as they have the promise of two teachers in their treaty, I would recommend that they have them. A beginning must be made, and, as they are now moving, I think they are entitled to all that is promised in their treaty. One school house has been raised, (not finished,) 16 by 20 feet. My buildings are mostly complete; also, the smiths' shops and houses. The farmers have not yet completed their houses and other necessary buildings, but they are in good progress. There has also considerable improvement been made in the mission buildings, fields, &c. Since the 29th of May last 100 acres of prairie have been broken up, and considerable part of it put in corn; and at this place 80 rods of sod and ditch fence made, with our assistance. Among the builders were the chiefs and braves. The first chief, Falkie or Spotted Horse, blistered his hands with the spade. More than 1,000 have moved to suitable places for improvement.

Some of the chiefs have held their own ploughs, and ploughed with their horses. If the Sioux could be kept from annoying the Pawnees, they would be in a prosperous state. Farming at present is the great spoke in the wheel towards their improvement of a temporal kind; blacksmithing is also of great service. Their teams consist of eighteen yoke of oxen and four wagons. As one having had considerable experience of the Pawnees, Sioux, and other tribes in this country, I would recommend, if practicable, that something be done soon to protect the Pawnees from their enemies, the Sioux, or Government men, missionaries, and all, may as well be dismissed from the country; and if such should be the case, I fear it will be the ruin of the Pawnees. Upwards of seventy have been killed the month past in their villages by the Sioux, and of those that were hunting about the same number; and, in all probability, four hundred horses stolen; all, without any provocation on the part of the Pawnees. Among the killed were the interpreter, La Chapelle, the first chiefs of the Republicans, and Tappages; also, the sons-in-law of the first Tappage, and grand Pawnee chiefs, and many of the chiefs and braves of the Republicans. About ninety Pawnees have also been killed this spring by war parties.

SAMUEL ALLIS,
Government Teacher.

No. 14.

SHAWNEE BAPTIST MISSION STATION,
Indian Territory, September 28, 1843.

SIR: During the past year, in connexion with other labors, our English boarding school has been kept in operation. We regret to say that it has been a time of trial. We have passed through a stage of persecution as unprecedented in its nature as it has been strange and indefinable. By means of some extraneous influence, an excitement arose among a portion of the Indians, which at one time threatened to prove disastrous to the interests of the station. The minds of many were disturbed, they knew not for what. They grasped the phantom presented before them, and, when they had found it air, they could not seem to cease for a while to be afraid. But the commotion was at length lulled to rest; and now, with the aid necessary for the sustaining of similar institutions, our prospects would be as propitious as ever. The place of those scattered from our school has been supplied by others. Stated religious instruction has been imparted to the Indians, on the Sabbath at the station, and during the week in different places at their houses.

The printing press has been kept in operation. The amount of printing done has not been so great as in some former years. This is owing to the demand having been in part supplied by the past. Some translations of Scripture, and some numbers of a newspaper, have been printed in the

Indian language, and others are in a state of preparation for the press. These are designed for the benefit of those Indians who are not able to acquire a knowledge of the English tongue.

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Respectfully submitted.

FRANCIS BARKER,
Sup't Shawnee Baptist Mission School.

Major R. W. Cummins,
United States Indian Agent, Fort Leavenworth Agency.

No. 15.

Delaware Baptist Mission House,
September 25, 1843.

Sir: Permit me to remark, upon the affairs of this station, that no particular change has taken place since my last report.

As heretofore, this station is under the direction and patronage of the Baptist board of foreign missions, Boston, Massachusetts; connected with it are myself, Mrs. Blanchard, and Miss Sylvia Case. In our English school, the moral and physical culture of the pupils, teaching the adults the knowledge of letters in their own language, and instructing in the principles of the Christian religion, are, and have been, the prominent objects of our effort. The advancement that has been made in the various departments of our labor is such as to inspire the hope that our exertions have not been misapplied.

Our English school is taught upon the common plan of primary schools. Six hours in the day are devoted thereto; branches taught are reading, writing, arithmetic, geography, astronomy, and natural philosophy. Some attention has also been given to drawing and vocal music. The whole number of pupils taught at this station during the year is twenty-three, viz: twelve boys and eleven girls. All are boarded and clothed at the expense of the institution. In addition to our day school, we have a Sabbath school at the station every Lord's day.

We have not been able, from the press of other duties, to give as much attention to teaching in the Delaware language as we would have been glad to have done. Yet, through our small efforts, a few have gained sufficient knowledge of letters to read in their own tongue understandingly.

The public worship of God has been statedly attended here, and at two other places in the nation, by us. The number of natives that attend is still increasing; three more have recently joined our church by baptism, upon profession of their faith in Christ. During a portion of the year our prospects were quite dark, in consequence of an influence, of which you are aware, that was exerted against us. I am happy, however, in being able to inform you that it has measurably subsided.

One house, 18 by 20 feet, story and a half high, has been added to our buildings since my last report. The farming operations at the station have been carried on successfully. The crop now on the ground will be an abundant supply for the station. I have hired but one hand, and he a Delaware youth, educated by us. In the female departments I have hired no assistance. By this statement you will see that no small portion of the labor of the station is performed by the school children. Some misapprehension seems to exist with regard to manual labor schools; this, and every other boarding school of which I have any knowledge in the Indian country, is conducted on that plan.

The entire receipts for this station of the past year are $725, drawn from the Baptist board of missions, Boston, Massachusetts.

Very respectfully submitted.

J. D. BLANCHARD,
Sup't Delaware Baptist Mission School.

Major R. W. CUMMINS,
United States Indian Agent, Fort Leavenworth Agency.

No. 16.

IOWA AND SAC MISSION, *September* 30, 1843.

DEAR SIR: Above you will find as correct a tabular statement of the Iowa school as I can give; it is lame and defective, and must necessarily be so, from the existing state of things. Owing to the unsettled state of the tribe, and the low estimate they put upon learning, it is difficult, if not impossible, with the present mode of teaching, to conduct a school with any system of profit to the nation. Two facts will show this: 1st. They will not yet send their children regularly to a school house—the teacher having to collect the children as he can in the village; and, 2d. The youth who, in boyhood, has got some knowledge of letters, refuses to attend to his book when a little advanced, choosing rather to paint and strut about the village than condescend to say a lesson.

The foregoing table shows those only who are entitled to any credit for regular attention to instruction, and, in fact, their attention has been very irregular. On the roll there are the names of between fifty and sixty, but many of them have not said half a dozen lessons through the summer.

The state of education in the Iowa nation is about as follows: Three young men who have been educated at the Choctaw academy, in Kentucky; all can read and write, and two have trades—one a blacksmith, and the other a shoemaker; but they are now as abandoned and as reckless, with regard to education, as the rest of the tribe. Four children in the family of the acting farmer, and two connected with the mission. These, as you are aware, have made about as good progress in the various branches of English education as white children of the same age; all can read English quite well, and all can write, except the two youngest. Of those embraced in the foregoing table, most know the Iowa alphabet; some can pronounce easy spelling, and two or three can read a little in their own language; but it can be of little service to them while they continue their present unsettled and indolent habits.

Some pains have been taken to reduce the language of the Iowas to a written system, and a small printing press has been sent out during the past year, and put in operation at the station; upwards of five thousand pages of elementary and hymn books have been printed; portions of the Scriptures have been translated, and will go to press as soon as time will allow; but even this, it appears, can accomplish but little until a more efficient mode of instruction is put into operation. Popular opinion, and several years' experience, all urge the necessity of some system which will bring the heathen youth under a regular course of mental and manual training. I had the honor of addressing you, in May last, a communication on this subject, and therefore will only say now, that inquiry and experience have tended only to confirm the notions that were then insisted upon. Since that time I had the privilege, with Mr. Hamilton, of visiting the neat and well-conducted manual labor boarding school among the Shawnees, under the direction of the Society of Friends, and also the extensive and valuable institution, of kindred character, under the direction of the Methodist brethren, in the same tribe. This institution, while conducted with its present spirit and interest, cannot fail to wield a powerful influence in favor of Christianity and modern refinement.

Some plan of this sort is unquestionably best adapted to the wants of these tribes, and it is hoped that the time is not distant when the Government, in connexion with benevolent societies, will unite their means and energies in the employment of such means as will be best calculated to bring the rising generation of these nations under a regular train of manual and mental instruction.

That the most effectual means may be employed for benefiting this unhappy race of men, and that your life may be long spared to promote their interests and complete your benevolent purposes towards them, is the sincere wish of, respected sir, your friend and obedient servant,

S. M. IRVIN.

W. P. Richardson, Esq.,
Indian Sub-Agent, Missouri.

No. 17.

Sugar Creek Catholic Mission,
September 30, 1843.

Honorable Sir: In forwarding the annual report exhibiting the condition of the schools at this place, I have the pleasure to state that there is this year a decided improvement. Although both schools, male and female, are under my superintendence, yet they are differently conducted. I have secured the services of Messrs. Thomas Watkins and John Tipton as schoolmasters. The former teaches the English language and the accessory branches in the forenoon, and the latter the English and Pottawatomie languages conjointly in the afternoon—both belonging to the nation, and are very popular—are also well calculated to impart instruction with greater facility, on account of their knowledge of both languages. The boys' school numbers sixty-one scholars, of whom forty-five attend regularly, if you except a short period early last spring, when they accompanied their parents to the sugar camp. They are daily instructed in reading, writing, arithmetic, and geography. The annexed catalogue will show the proficiency of every individual in particular, in the different branches, together with his age and the distribution of time observed in the school.

Rev. C. Hoecken, Rev. A. Eysvogels, and myself, are engaged in ministerial labors, and administer medicine to the sick. Mr. A. Mazzelli chiefly attends to surgical cases, and the services of Mr. George Miles, as farrier, have been valuable to the Indians.

The female academy is conducted by five ladies of the "Sacred Heart," (a religious community,) who devote all their attention to the moral and mental improvement of sixty-one pupils, forty of whom may be called regular. Besides spelling, reading, writing, and ciphering, they have taught their scholars carding, spinning, sewing, knitting, marking, embroidering, and even some of the accomplishments which are only taught in some of the most fashionable boarding schools in the States, such as fancy work and artificial-flower making; although the more important and more useful objects relating to domestic economy have not been neglected on that account. The girls have been instructed how to cut and make every article of dress and apparel, to bake good bread, make butter, and do every kind of housework, as circumstances may require. Six pupils are boarded by the institution.

I am of the opinion that this nation would be greatly benefited if some of the oldest boys attending the school could be instructed in some of the mechanical arts. This, however, our means do not allow to begin for the present. We have also been prevented from setting the looms in operation in the female academy, for want of the necessary buildings. I would respectfully solicit the attention of the department on these two subjects, and if it be considered that the allowance made by the Government last year did not exceed $300, and that the aggregate number of children educated in both schools amounts to one hundred and twenty-two, I trust you will come to the conclusion that the same appropriation is inadequate to our wants.

Most respectfully, your very obedient servant,

T. F. L. VERREYETT.

Hon. J. M. Porter,
Secretary of War.

Iowa and Sac Missions,
September 30, 1843.

Sir: It is now two years since I accepted of the appointment of teacher under Government for the Sac and Fox tribe of Indians of Missouri; and during that time all the efforts made to induce them to send their children to school have, with one exception, proved unsuccessful. Owing to this circumstance, I thought of resigning my situation at the close of the first year; but, at the suggestion of yourself and others, who feel an interest in the welfare of these Indians, I consented to retain the place, and try if further efforts would not be crowned with better success. Of the result you are aware, having had but one scholar through the winter and early part of the spring, at which time he ceased to attend. I now tender to you my resignation; and I do it the more freely from the fact that they have, within a few days, made provisions for having their funds applied to aid in establishing and conducting a manual labor school near to or among themselves. As it was my intention to recommend the preservation of their funds until such an institution could be established among themselves, and as they have now manifested a willingness to have such an institution established, I trust you will indulge me with some further remarks.

The subject of christianizing and civilizing the various Indian tribes on our Western frontier is one that ought to enlist the best feelings of the heart, both of the Christian and philanthropist. Much wisdom and care are necessary in the adoption of plans for carrying out these objects; and various circumstances must have an important bearing in deciding upon the plans that may be adopted with respect to the different tribes, that the benevolent designs of the Government may be carried out, and the temporal and spiritual welfare of the Indians promoted. A plan that may be necessary, and afford the brightest prospect of usefulness in one tribe, when applied to a different tribe may prove quite unsuccessful, from the fact that their situation and circumstances are altogether different. That the various Indian tribes do differ from each other in many important respects, both morally and physically, extending from the most cruel and untutored savage to the peaceful and Christian citizen, cannot be doubted by any who have even a limited acquaintance with Indian affairs. To pursue the same plan in every respect among different tribes would neither be wise nor politic. Nor could we hope for any good degree of success without having a constant regard to their condition, and the advances which they might make from time to time. With respect, then, to the tribes among whom we labor, I would make a few remarks previous to suggesting a plan for their more effectual improvement. And I remark—1st. That they are, in almost every respect, destitute of any proper mental, moral, or physical culture, and far sunken in vice and superstition. 2d. The examples, as far as I can learn, which they have had since the commencement of their intercourse with the white population of our country, have been of the most deleterious kind, if we except perhaps a few of the past years; and even during this time they seem to have been, to a very great extent, under the influence of those who neither fear God nor regard man, and still remain under the same influence. 3d. They still remain, in some degree, a roving people, and retain their unsettled habits; consequently, we cannot expect to find in them much decision of character, but, on the contrary, a strong and almost invincible inclination to follow the dictates of their corrupt nature and depraved appetites; notwithstanding, they confess such practices are ruinous. 4th. Although they have the most painful experience of the superiority of the white man, they seem not to realize that it is his mental, moral, and physical culture that has given him this superiority; and through that ignorance, which is the mother of superstition, they seem to imagine that wisdom belongs to them alone, and must die with them. 5th. They appear to have an innate independency of spirit, (which is peculiar to the Indian character,) and which in a great measure renders them averse to the direction and control of others.

These things must be counteracted; and, to do it effectually, our efforts must be directed to the improvement both of body and mind; and as their capacities increase, facilities for acquiring new ideas, and bringing them under a more perfect physical and mental discipline, must be afforded. We cannot hope, under existing circumstances, to bring more than a small minority of the present, and perhaps even of the rising generation, under the influence of any thing like a common English education. But, because we cannot do what we would, shall we not do what we can? Is it not a duty we owe to them to afford to all who may desire it an opportunity of a knowledge of those things which add so much to our own comfort, and afford us opportunities of becoming acquainted with our future destiny as accountable beings? Surely, we cannot refuse, and still lay claim to any of those finer feelings which adorn the human character.

The question then arises, what education will be most advantageous to them as they now are? The answer undoubtedly is, such as will, under the blessing of God, be most conducive to their present and future happiness. To secure the latter, a knowledge of the great principles of Christianity is indispensably necessary; for how shall they believe in HIM of whom they have not heard? and to hear understandingly, this knowledge must be communicated to their understandings in a manner that they can comprehend. And to secure the former, they must be taught to *secure for themselves*, by patient and persevering industry, the necessaries and comforts of life; and this can no doubt be most effectually accomplished by combining precept with example.

While, therefore, no efforts ought to be left untried that would afford a hope of bringing the more advanced in life under the salutary influences of the gospel, (the consequences of which would be the adoption of civilized habits,) special attention should be given to the young, and we would no doubt see fulfilled in them the truth of the words of the inspired penman—"Train up a child in the way he should go, and when he is old he will not depart from it." And if persevering and well-directed efforts of this kind were made, it would not be long until we would be enabled to dispense with a very large portion of the forts and armed men that are now employed for the protection of our frontier, and consequently with the expense connected with them. And we might hope soon to see some such plans carried out, were it not for the strangeness of *human* nature that is seen in the conduct of nations, in being more willing to give a *thousand dollars* to subdue a foe by violence, and keep him in submission by terror, than to give *ten* to subdue him by kindness, and keep him submissive from feelings of gratitude.

But how little is the influence exerted by a few individuals upon a number of children, who are continually witnessing the degrading and soul-sickening conduct of heathen parents and companions, to what it might be if those children were placed where they would not witness such scenes of pollution and filth, but, on the contrary, have before them Christian example and Christian instruction! and is there not the strongest probability that the influence would be exerted the other way, and that in time the child would exert an influence over the parent that would be both salutary and effectual? Hence arises the necessity of establishing manual labor boarding schools in the nation; because, in addition *to all other advantages*, the amount that it would require to educate one or two at any of our literary institutions would educate five times the number at home; and I think, also, give them an education that would be much more useful to them in every respect. And if unforeseen circumstances should arise to prevent any from receiving such an English education as would be advantageous to them through life, they might with little or no trouble be brought to read their own language, and through it receive truths that would exert a salutary influence upon their minds through life.

I do not conceive that it would be necessary to enter into extreme plans at once with these tribes. Let preparations be made to combine for the present with instruction in letters instruction in farming operations, and perhaps the use of some of the most simple tools in wood work. It would be time enough to teach the children the different trades when the following of such trades would be of use to the nation, and not before.

As no effort of the kind has yet been made for the *elevation and preservation* of these tribes, and as the Indians themselves have done something towards it, I trust, sir, you will use your influence with the Government to have a certain portion of the funds appropriated for the establishment of a manual labor boarding school at this place.

Yours, respectfully,

WILLIAM HAMILTON.

Major W. P. Richardson,
Great Nemaha Sub-Agency.

No. 19.

Grand Traverse Bay, *August* 21, 1843.

Dear Sir: It will be perceived by the accompanying report that there are enrolled in the school forty Indian and eleven white children, making in all fifty-one. Of these, eight read correctly in their own and our language. Seven spell readily in words of four syllables. The others are learning the elements, and spelling in words of one and two syllables.

It is to be regretted that the attendance on the school is not more regular. For causes mentioned in a former report, the children, with few exceptions, are absent from school frequently, and their improvement retarded. The capacity of the children is about an average with white children. The school has been kept in regular operation through the year, except a vacation of three weeks, and a short suspension on account of the illness of the teacher.

Besides the regular school, there has been a Sabbath school in operation since December last. There has been a regular attendance of about forty, chiefly adults. The chief, Ahgosa, (as also some of his principal men,) has been a regular attendant on the Sabbath school. They are making commendable progress in learning to read their own language. Several heads of families have already learned to read with a good degree of correctness.

The moral improvement in most who have given attendance to the gospel is very manifest. Temperance is making advances among them. For the past year there has been no drinking that I am aware of at this place. All have been sober and orderly here. Some, who three years ago were amongst the hardest drinkers, whose profession of reformation was ridiculed, are perfectly sober, and are consistent members of the church. A church of twenty members was organized last spring; of that number, twelve were native men and women. The external change in these, in personal cleanliness, in their dwellings, in their correct, sober, and industrious habits, is very great; and we hope there is a corresponding internal change, which is the only sure pledge that they will continue to advance towards a state of moral perfection. One of the chiefs has enrolled his name among the followers of the Saviour. The other chief professes his determination to receive the religion of Jesus. Several have requested admission to the church who have been for some time on trial, and if they continue to walk correctly will probably be received this fall.

The church, which I mentioned in my last report as in contemplation of being built, is up and enclosed, and will soon be ready to be occupied. The building is 40 by 25 feet. Mr. Robert Campbell, Government carpenter, did, as his other duties allowed, render important service in putting up the frame. By the assistance of Mr. Damé, I prepared a kiln and burnt about one hundred bushels of lime for plastering the walls. The means of erecting the building are furnished from the funds of the board, chiefly obtained by special contributions for that object. The men themselves have manifested both interest and industry in procuring materials and in the erection of the church.

The village is steadily improving. Instead of the temporary mat lodge, or frail bark house, substantial log dwellings are going up. Six new log houses have been put up this summer. Others will be put up this fall. They saw lumber, make shingles, &c. They have but one saw, which retards their operations. If one or even two more saws could be furnished them, it would facilitate their work.

I do not know that any accurate distinction can be made between those who follow the chase and those who follow agricultural or mechanical pursuits. All who have families make gardens, and depend chiefly on what they raise for food, and all hunt more or less in the winter. This distinction, however, may be made: some, after securing their crops in the fall, remove to their hunting grounds and spend the winter there. Others remain here permanently, making two or three hunting excursions during the winter. Of these there are now fourteen families, who have made arrangements for permanent settlement here; others expect to do so.

Last winter, owing to the crop of corn being short, there was a scarcity of provisions. This spring they engage with great industry in preparing and enlarging their fields, and there is the promise, if the weather should be favorable, of a large reward for their labor in an abundant supply of corn. Some of them also acquire with great readiness the improved arts of civilized life. The young man who has been in the smith's shop has acquired a good knowledge of the trade. The chiefs here are desirous of having one of their young men taken into the smith's shop, and one into the carpenter's shop, to acquire those trades, so that they may have their own mechanics, as well as become their own farmers.

As it respects the physical outlines and character of the country, they are probably well known, from the topographical and geological surveys which have been made of the peninsula. There are but two streams near here which would furnish water power for mills. These are from six to eight miles distant.

P. DOUGHERTY.

ROBERT STUART, Esq.,
Acting Superintendent Indian Affairs.

No. 20.

MISSION HOUSE, SAULT STE. MARIE,
September 14, 1843.

DEAR SIR: Excuse me for addressing this communication directly to you. I have just returned from the East, and received your communication, and have only time to express my regret that I was not present to give it a direct attention in due season. As the time for reporting the facts required by the department has already gone by, it will be impossible for me now to report them in season. But I wish, if possible, to rectify a mistake which I find I have fallen into, in reporting the funds drawn from the Government. I had not means before me of positively stating the exact amount drawn by the board, nor of giving the exact amount of the expenditures at the station, as the board had expended some amount for it, the account of which I had not received, which has since come to hand.

The total amount expended, as given by the secretary, is $1,979 81. One thousand dollars of this is drawn from Government by the treaty of *Fond du Lac*, August, 1826; and $700 from the appropriation for education and missionary purposes, to be expended among the Ottowas and Ojibwas, (or Chippewas,) as provided by the treaty of 1836, under the arrangement of 1837. The balance is from the general fund of the board.

As the mail leaves at one, I have not time to separate the accounts any further than this for the present year, but will endeavor hereafter to comply with the requirements of the department as closely as possible.

If it will answer your purpose for me to make out another report, please inform me of it, and I will do my best to comply with their wishes.

Very respectfully, your obedient servant,

A. BINGHAM, *Missionary*.

ROBERT STUART, Esq., *Sup't Indian Affairs*.

No. 21.

HONORABLE SIR: I have the honor to send you the report which you requested in your letter of July 8, 1843.

In the mission under my charge there are about 1,100 Catholic Indians of the Ottowa tribe. There remain a few pagans; their number is unknown to me.

The Christians live chiefly by fishing. They cultivate, however, from one to four acres; raise corn, potatoes, and vegetables; build neat houses; and make their own clothing, some in the fashion of the whites, some approaching.

Only the pagans, and very few Christians, are employed in the chase during the winter season.

They are located at the villages of Arbre Croche, La Croix, Middletown, Cheboygan, *Isle Castor*, &c.

There are three schools in my mission, which are kept by four assistants, under my direction. I take care to visit them often, and at times I keep them myself. I received this year $400 from the right reverend bishop of Detroit, of the Government money, which has been expended in the following manner:

To Madame Fischer have been paid at Arbre Croche - -	$79 00
To Michael Kinnis have been paid at La Croix - - -	50 00
To Dominic Enniwecki have been paid - - - -	20 00
To Michael Gosigwad have been paid at Middletown - -	18 00
As the receipts show - - - - - -	167 00

The rest I had to expend for my support as school director, and for the necessary expenses of the school, such as books, paper, quills, ink, firing, interpretation, attendance, &c.

As the number of scholars is constantly increasing, and their progress requires that I should divide the school of Arbre Croche and that of La Croix into two classes, and more help becomes necessary, and also because I have to increase the salary of my present assistants, in consequence of their good behaviour, and their improving in the art of teaching, so that I must give them one shilling for every lesson, it is evident that I must desire that my means should be proportioned to the increasing demands of my mission.

The school house of Arbre Croche being too small, the Indians have built a larger one, of hewed timber, which is not finished, and another one at La Croix, where there was none, which is in the same state. We want means to procure doors, windows, stoves, and boards.

Finally, I must mention that the improvement of my Indians since a year has been remarkable, not only because the temperance cause has taken firmer root amongst them, but also because, on account of their strong hope that they may buy their land, and not be removed from it, they have become visibly more industrious.

I recommend myself and my dear Indians to your favor; and remain, with all due respect, your most obedient servant,

FRANCIS PIERZ,
Catholic Missionary.

No. 22.

Mission House,
Sault Ste. Marie, July 31, 1843.

Dear Sir: I herewith transmit a tabular report of the school connected with the mission under my charge, together with a separate list, containing the names, ages, and sexes of the pupils who have attended school any portion of the year.

A well-regulated school has been taught through the year, with only occasional vacations of one week at the end of each quarter. Reading, writing, arithmetic, geography, English grammar, history, philosophy, and some lessons in botany, have been taught the present year; also, two adults, (Indians,) who are reported on our list, have been taught to read in their own language. Those who have attended regularly have made tolerable progress in their studies; but many, as is too common, have been irregular in their attendance, and consequently have made but little real progress.

Those who are received as beneficiaries are instructed in all kinds of business common among us, suited to their age and sex. We also encourage and aid the Indians in agricultural pursuits; and I think there is an increasing inclination discoverable in them towards it.

We are happy in being able to state that our efforts to suppress intemperance among them the past year have been productive of much good. Although some have violated their pledge, and a few have returned to their former habits, others who had done so have confessed their wrong and renewed their pledge; and many who had been hard drinkers have thus far been enabled to resist the temptation.

With sentiments of respect, I am, sir, your obedient servant,

A. BINGHAM, *Missionary.*

James Ord, Esq.,
Sub-Agent of Indian Affairs

No. 23.

Report of Indian schools in the Catholic missions under the superintendence of Bishop P. P. Lefevre, A. D. 1843.

* * * * * * * * *

In all these schools, spelling, reading, writing, are invariably taught, and also ciphering and geography to those that are more advanced. At the stations of Arbre Croche and Mackinac, we have also introduced sewing, knitting, trimming with porcupine, &c. The proficiency of the scholars who regularly attend is in general very satisfactory, and some have improved beyond all expectation. The great majority of these children have natural capacities enough to learn any science or trade, but the great difficulty is, to train them up to steady habits and assiduity; for many of them are so irregular in attending, and find so many reasons to absent themselves from school, that it is even difficult for many teachers to know the exact number of those who have attended their school in the course of a year. However, as nothing but religion can civilize and bring them to a full sense of their duty, we entertain the most sanguine hopes that the influence of the Catholic faith will soon obtain in them that desired effect. The Indians in our stations are fast embracing that religion, and we observe, with deep sensations of joy, that, so soon as they have subjected themselves to the mild yoke of Christ, their savage dispositions and wild propensities begin to disappear; they become enamoured with the beauty of virtue; industry, sobriety, and morality, are made chief objects of emulation among them, and their attention is gradually turned to all the necessary parts of domestic economy; justice and uprightness in their dealings, and charity towards each other, become also their great characteristics—so that we have great reason to believe that the period is fast approaching when it will be said with admiration, particularly of the stations of Arbre Croche, La Croix, Middletown, and Cheboygan, behold! these Indians are really civilized; they possess the virtues and fine qualities of civilized people, without being tainted with their vices and immoralities.

I am, with sentiments of respect and cordiality, your humble and obedient servant,

PETER P. LEFEVRE,
Bp. C. Adm., Detroit.

Robert Stuart, Esq.,
Acting Superintendent Indian Affairs, Michigan.

No. 24.

July 31, 1843.

Sir: On the preceding page, I present you with a tabular report, showing the state of the schools, &c., under my superintendence. I have only to add, that we regard the state of these missions as being tolerably prosperous. There has been quite a handsome increase of members to the church at both stations during the past year. The schools have been generally well attended, and the scholars have made commendable progress in their studies.

Sault Ste. Marie.—At this place, the Indians have planted more this season than usual, and their crops look promising. Some of them are building houses for themselves of hewn timber and shingle roofs, that, for style and workmanship, would do credit to a white man in any new country. And as they have now, for the first time, a carpenter among them for a few months, if the Government could also furnish them with some lumber, it would be of very great service to them.

We are not without discouragements, but the greatest of them grow out of the nefarious whisky trade. Oh that men might be persuaded to forsake this diabolical business, cease doing evil, and learn to do well. We are still trying to push our conquests, and in the name of our common Saviour we hope for victory over the powers of darkness, and a wider spread of light, truth, and holiness, among these oppressed and degraded children of the forest.

All of which I have the honor to submit.

W. H. BROCKWAY,
Sup't Ind. Missions in the Michigan Conference.

JAMES ORD, Esq.,
Indian Sub-Agent, Sault Ste. Marie.

No. 25.

MACKINAC, *August* 29, 1843.

SIR: I have the honor to present you the annual report for this year (1842–'43) of the Indian schools under my superintendency as a Catholic missionary at Mackinac, the Point St. Ignace, and La Manistie.

The school of Mackinac, directed by Miss Tanner, was attended this year by the number of thirty-nine pupils, viz: ten white boys, sixteen white girls, four one-quarter Indian boys, eight white quarter Indian girls, one pure Indian boy. The improvement of all these pupils in all branches of the common instruction is very satisfactory.

The school of the Point St. Ignace this year has been almost entirely imperfect and useless. I had appointed for its teacher Mr. Augustin Amelin, but his school was attended but by a few pupils, and for a short time, so that it is unworthy of notice.

The school of La Manistie, directed by the Indian brothers, Anthony Maircy and Paul Chinonge, was attended by the number of seventeen boys and twenty girls, all pure Indians. Their progress in their own tongue, and in the Christian doctrine, is very sensible and satisfactory. The moral, religious, and civil advancement of this mission are very consolatory.

The abovesaid schools, during the five years of my ministry among these missions, have been supported by the money which I have received from my superiors of Detroit. Never have I received other money from other societies. The teachers have been entirely paid the first, second, third, and fourth years. For this last year I have paid myself, with my own money, Miss Tanner, and part of the salary of the teachers of the school of La Manistie. For the school of the Point St. Ignace, there is almost nothing to pay, because it was frequented but for a short time. The Bishop Lefevre, who must come here in a few days, will pay by himself and close the salary of the teachers for the said last (fifth) year.

As my residence, during my ministry in these missions, has always been at Mackinac and St. Ignace, and as I visited only twice the mission of La Manistie, and for a short time, so I am not able to furnish any statistical statements of its physical aspect, mineral resources, and other privileges. The missionary of Arbre Croche, the Father Pierz, hereafter will deserve the mission of La Manistie, and the Father Shola those of Mackinac and St. Ignace. I am destined for other places, and I will leave this place next week.

I am, very truly, your servant,

T. SANTELLIZ, *Missionary.*

Robert Stuart, Esq.,

Acting Superintendent Indian Affairs, Mackinac.

N. B. The salary of the teachers this year was $100 for each teacher.

SANTELLIZ.

No. 26.

Ottowa Colony, *August* 16, 1843.

Sir: Yours of the 8th, also, through you, the circular from the War Department of the 25th ultimo, have been received. The requisition of the circular will change the affairs of missions, and render them dependent for support on the Christain public, while the school will obtain its resources from Government.

The school at this colony has been in operation about six months the past year, divided into winter and summer terms, of three months each. The number in attendance has been thirty-eight—twenty-one of whom are pure Indians, and not more than two-thirds attending constantly. The majority of the school are boys. The most of the school are in monosyllables and easy reading, one in arithmetic, and a number write. In connexion with my day school, last winter I had an evening school, composed of adults, who were taught to write numbers for computation on slates, and by the complicated movements of an orrery they learned the revolutions of the heavenly bodies, and the names and magnitude of the planets. This school was attended by fifteen or twenty men and women.

The expenses of this colony, since its formation in the autumn of 1836, including the purchase of buildings for family and school, and support of teachers, have been $10,267 56. The amount received from Government during the same time has been $2,050. The annual expense, exclusive of Government allowance and the original purchase, has been $876 79. The annual allowance from Government since 1838 has been $372. The allowance from Government has been appropriated for the services of teachers and stationery, and erecting suitable building for school. The teacher has been allowed $300 annually from Government, for his full compensation for services in the school. The particular amount of Government funds unappropriated by the Baptist Foreign Mission Society, under whose patronage I labor, I am unable to state, as the particular amount designed for this colony has never been communicated. In my last report I mentioned the imperfect system of our school. It is now anticipated that immediate measures will be adopted to give new impulse to our school, and render our service more salutary and advantageous to the pupils. The plan of operation is simply this: to impart the white man's intelligence by the use of letters, and his means of support by the introduction of domestic, mechanical, and agricultural enterprise. To carry forward this, we wish to commence with the females first, by collecting those of a proper age, and as many as our means of support will allow. These females placed under the charge of an instructress, who possesses an ability to maintain herself by her needle, weaving, or spinning, &c., and that now she introduce that kind of labor which the country may call for, and of the labor (after reserving what is necessary for their own wants) be sold, and the avails taken towards their individual support. The situation of the Indian is such that we must discover to him the pecuniary advantage arising from our instruction. Letters never fed nor clothed them or their children. Labor in a mission family only fed their children during their stay; returning to their parents, they had no knowledge to commence business themselves, and obtain support from what they had learned; therefore, we would introduce that domestic service from which they can derive immediate advantage, and have them carry the impression that they are working for themselves, and not for their patrons. This plan would interest others, who are not connected with this household, and induce them to learn that business which will contribute to their wants and necessities. From this source the school would receive a new impulse, while it would impart life and vigor to all our operations.

To perfect our plan, we wish a separate building for the accommodation of boys, of suitable age, to learn trades, and others to labor on the farm. To encourage this department, I would assist them in the use of tools and materials; and the avails of the articles manufactured, and the produce of the crops, should be applied for their benefit. This plan will demonstrate the fact that an Indian, by industry, can obtain a livelihood by the white man's mode of life.

It is with pleasure I am able to state that the religious aspect of things is changed since my last report. An unusual seriousness has pervaded the minds of the young and old. Five have united with the church, and many backsliders have been restored, while tears of penitence are shed by those who had once ridiculed religion, and despised serious people. We never had greater reason to be encouraged in every department of our labors. For six months past, not one case, to my knowledge, of drunkenness has occurred. Peace, health, and prosperity, exist in the colony.

I am, respectfully, your obedient servant,

L. SLATER, *Teacher.*

ROBERT STUART, Esq.,
Acting Superintendent Indian Affairs.

No. 27.

DETROIT, *October* 12, 1843.

SIR: I beg leave to submit to you the following statement in regard to the schools within the Lapointe agency, which are taught by individuals who are under the direction of the American board, and are supported by that institution.

There are two schools at Lapointe—one for male and the other for female children—which are taught five days and a half each week, from four to six hours a day. These schools are severally under the instruction of a male and female teacher, whose time is principally devoted to this object. These schools are free and open to all children whom we can induce to attend them. The number enrolled on the teachers' lists at present is 43 males and 38 females. This is about the average number for the year. In addition to this number, there are many others who occasionally attend the schools, but whose attendance is so irregular that they receive but little benefit.

The school at Packeguma, which has been suspended for more than two years, on account of the removal of the Indians from that place, is about to be resumed, and will be taught by a competent and experienced teacher. The Indians are returning to that place in considerable numbers, and have the past season manifested an unusual desire for improvement.

A station has recently been formed at Red Lake; and a school will be opened the present season, as soon as suitable preparations can be made for doing it.

In addition to the above statements, I beg leave to say that several individuals have gone to Leech Lake, to establish themselves there, and will open a school as soon as their circumstances will permit. Though not under the direction of the American board, they desire to co-operate with the agents of that board.

With much respect, I am yours, &c.

S. HALL.

ROBERT STUART, Esq.,
Superintendent of Indian Affairs.

No. 28.

GRISWOLD COLONY, *August* 16, 1843.

DEAR SIR: I received your communication, and have the pleasure to lay before you the following report:

The whole number of scholars attending school is 18—12 boys and 6 girls; the average number 13. Ages of the scholars, from 16 to 4. The progress of the scholars has been as good as we could expect, considering the irregular attendance, on account of sickness, and the necessity of hunting some portion of the time, as they generally take their families with them on such excursions. In industry, the Indians have greatly improved In morals, their improvement has exceeded our most sanguine expectations. The destroying demon of Intemperance, as if ashamed of his work has fled to his own place, where we hope chains may abide him until

Mercy shall accomplish her glorious work in the redemption of the red man from all his vices and all his woes. Our board are very grateful to the Government for sending them a farmer. The amount of money drawn annually from the Government by the bishop is $1,100 ; and this is all we receive from any source. The accompanying report contains an account of the expenses of the mission from the commencement, including my salary up to the first of April, 1844. The amount credited may not be as much as I have received, as I have not been paid with any degree of regularity, but have had to draw on the banks in small checks, not having the money due paid either quarterly or annually, and have been subject to great inconvenience as a consequence thereof, having to contract debts for all the expenses of the mission. The pay of the interpreter has not been enough to secure the services that we need. The bishop has allowed him but sixty dollars per year. I requested the bishop to divide the sum that he was willing to allow the missions annually into quarterly payments, and authorize me to draw on him for the amount. This he refused to do, for reasons best known to himself.

My duties have been onerous, having to superintend their farming and their whole improvement until the farmer received his appointment. Yet you will perceive, by the reports of the bishop to the convention, that our labor has not been in vain. In regard to the amount of money credited as received from the bishop, it will be easy to ascertain any mistake, as he can produce my drafts on him for all the money I have received. For the further promotion of the interests of the mission, I would suggest (if it can be done) that the superintendent of Indian affairs disburse the amount of money allowed by the Government, quarterly or annually, for such objects as the Government shall specify, and that the bishop's jurisdiction shall be purely spiritual, and let the Episcopal church pay his expenses of visitation, as they do when he visits his white congregations. I would suggest that the interpreter be allowed a fair compensation for his services, and be required to attend the school whenever the teacher shall think it necessary. No exertion has been made in our church thus far to aid the mission—no presents in clothing or books to encourage the Indians to become civilized. Our case has never been presented to the board of domestic missions for its consideration ; and if our church contribute nothing, why should it control the money provided by the Government according to the treaty stipulation ? If you wish for proofs of the entire satisfaction of the bishop in reference to the discharge of my duties as missionary and teacher, I have them at hand in his own handwriting.

* * * * * * * *

I should like to have you visit the mission, and examine personally, if convenient. I have no doubt of your perfect satisfaction. The Indians have improved in every respect far more than we could have anticipated, considering the very drunken and degraded state in which we found them. Our school house must be repaired for the winter. It should be ceiled and provided with a brick chimney or large box stove. Up to the time of the farmer's appointment, the farm has been well cultivated, and has produced crops equal, if not superior, to any farm in the country.

All which is respectfully submitted.

JAMES SELKRIG, *Teacher.*

ROBERT STUART, Esq.

No. 29.

OTTOWA AND GRISWOLD COLONIES,
September 30, 1848.

SIR: In obedience to the instructions received from you, I have the pleasure to transmit to you my first quarterly report, as assistant farmer at the Ottowa and Griswold colonies.

As soon as I received my appointment I entered on the duties of my charge, and found the Griswold colony under better state of improvement and civilization than I expected. I was well received at both colonies. I found at the Griswold station about sixty acres of land, in as good a state of cultivation and with as promising crops as that of any white man's farm in the neighborhood. Their crops consist of corn, potatoes, beans, &c. We have secured a sufficient quantity of hay to keep the oxen through the winter. We have also commenced four dwelling houses, which we hope to finish before the winter sets in. The Indians have been chopping and clearing more land, which they intend to plant in the spring. It will be seen that the time employed at this mission, thus far, has been but half a quarter, and in this short time no great improvement can be discerned, yet it has been a good commencement, and, from what I can judge of the disposition of the Indians, it is worthy of the attention and fostering care of the Government. In regard to the Indians at the Ottowa station, they appear well disposed, and are glad to receive assistance from the Government. They are in want of many things, to enable them to farm it to good advantage. They have no oxen to break up their land with, and, until this evil is remedied, we cannot advance much in farming. They feel anxious to improve in every respect. After securing hay for their ponies, I have repaired their wagon and cart, got out some timber for a new wagon, (as their old one is poor,) repaired their houses, &c. I found sixty or seventy acres of land under good improvement, with corn, potatoes, beans, &c. In the short term of half a quarter, no great improvement can be made; but, on the whole, permit me to remark, the prospect is now fair for raising those missions to a condition of improvement that ought to satisfy any one, who is disposed to doubt the utility of expending money and labor for the improvement of the American savages, that it is an object well worthy of strong effort, patience, and perseverance.

A great conquest is gained towards Indian cultivation, when we can persuade them to renounce entirely the use of the fire water. This, in a measure, has been accomplished at both colonies. Some at both places have been tempted to swerve from their pledges; yet all who are acquainted with the Indians acknowledge that the reformation, in this respect, has been astonishing. I hope, at the close of the year, to be able to report still more favorably; and thus subscribe myself, your humble servant,

STEPHEN FAIRBANKS.

ROBERT STUART,
Acting Superintendent Indian Affairs.

No. 30.

OLD WING, *September* 1, 1843.

DEAR SIR: In compliance with a request contained in a circular from the War Department, and in a letter from yourself, I send you the following report. Whether it was the design of the department to have the report extended beyond the past year, I am not aware; I therefore cover the ground of receipts and expenditures from the commencement of the year 1840 to the present time. It is known by the department that the W. M. Sac B. Indians, under whose patronage this mission and school were established, received, in the year 1839, $750 from the Government, through the A. B. C. F. M.

January 16, 1840, there was due me for individual funds previously expended for the benefit of the school and mission		$64	55
Receipts in 1840—	Money	25	50
	In provision and clothing	174	59
	General expenses	80	12
	For interpreter	6	17
Receipts in 1841—	Money	79	74
	In provisions and clothing	201	63
	General expenses	140	43
	For interpreter	1	63
	Individual fund expended	10	00
Receipts for 1842—	Money	3	00
	In provisions and clothing	26	16
	General expenses	12	54
	Individual fund expended	68	31
Receipts in 1843—	Money	8	50
	In provisions	15	94
	Individual fund expended	45	94
	General expenses	35	62

The above funds have been received through various channels from the Christian public. They consist chiefly, as will be seen, of articles for family consumption. The expenses have been paid in the money received and in clothing; when these have failed, individual funds have been used, as noted above.

On account of the small amount of funds annually received, we have endured great privations. Our hands have been in a manner paralyzed, our work impeded, and the small amount of individual funds we possessed nearly expended, so that we shall not be able to continue in the field but a short time, if the Government does not lend its aid for our support.

Hitherto our whole time has been spent on the ground, and, whenever the Indians have been present, every opportunity has been improved to impart instruction to them.

The whole number of scholars entered on the list in the year 1840 was 20; the whole number in 1841 was 19; the whole number in 1842 was 18; the whole number in 1843 was 30. The school has been kept only during winter. The progress of the scholars in learning has been good. Six of the girls have been taught to knit during the past year; they appear highly pleased with the acquisition.

Our meetings have been held during the years above noted on the Sabbath, and I have preached whenever the Indians have been present to attend. A portion of the time they have been very interesting, and their advance in religious knowledge is very promising; also, during the past year, they have been much more temperate and industrious than formerly, and their success in the cultivation of their land is indeed flattering.

The farmer appointed by the Government (Doctor O. D. Goodrich) is at the colony, attending to the duties of his station.

There are now but seven families of the Indians here; the rest are absent, but expected soon to return. Much good, it is hoped, will be the result of your anticipated visit to the colony this fall.

I remain, dear sir, your obedient and humble servant,

GEORGE N. SMITH.

Robert Stuart, Esq.,
Acting Superintendent Indian Affairs.

No. 31.

Choctaw Agency West, *November* 3, 1843.

Sir: I beg leave to submit the following report upon schools, confining myself mainly to those among the Choctaws, as the reports from the different agents and sub-agents, within this superintendency, have already been forwarded to the department.

It affords me great pleasure to communicate the deep and increasing interest manifested by the Choctaws upon the important subject of education.

The reports submitted herewith, from the teachers employed under treaty stipulation, and also from the missionaries in the nation, clearly and satisfactorily exhibit that the Choctaws are appreciating the great advantages and vital importance of a system for the useful education of their children.

These reports are, however, not the only evidence to which we can refer. In addition to the funds at present provided by treaty stipulation for educational purposes, the Choctaw general council have, with a commendable unanimity and zeal, appropriated from their own funds the sum of $18,000 per annum, to be expended for the support of institutions of learning in the nation. The system prescribed by the council is now commencing, with fair prospects of the most happy results. It is perhaps without precedent, that an Indian tribe, generally opposed to all innovations, save those connected with vice, who eight or ten years ago were without any law, except custom and the arbitrary fiat of a chief, should, in that short space of time, become so far advanced in civilization as to make a radical change in their customs and form of government, and to adopt a written constitution and laws, which are easily enforced and readily submitted to by the people.

This sum, provided for the support of schools, has formerly been paid per capita, as annuity to the Choctaws, and the change of application of so large an amount by the Choctaw general council, and sanctioned by the people, to be expended in the nation upon a plan previously laid down, cannot but be hailed with much joy by those who desire the improvement d happiness of mankind.

These evidences clearly show that the Choctaws are improving, and, with the ample means now in a course of expenditure, will be able to educate the great mass of the nation. Fort Coffee academy, situated on the Arkansas river, is now under the charge of the Rev. W. H. Goode, a Methodist clergyman, well qualified not only as a preacher, but as possessing business habits and tact to conduct such an institution. The old buildings of the fort are repaired, so far as they could be used, and others are erecting for the accommodation for fifty or sixty boys, or as many as the funds can support and educate. The Choctaws have appropriated to this academy, in connexion with a female school, to be put into operation near the agency, $6,000 per annum, and the Methodist society have obligated themselves to furnish $1,000 per annum. Every thing is now in a state of forwardness, and the school will be opened probably in December. At this school, in addition to letters, the boys are expected to labor upon the farm, to receive instruction in mechanical arts, thereby giving them a practical business education, and at the same time preparing mechanics for the nation.

I anticipate great benefit to the Choctaws, from the location of Fort Coffee academy; it will exercise a happy and salutary influence on that part among whom it is located, heretofore greatly behind the other portions of the nation in point of intelligence and morality.

The report of the Rev. Alfred Wright, of the Presbyterian church, gives a very flattering account of the female seminary at Wheelock. This is one of the schools now supported from funds appropriated by the general council. I beg leave to refer you to Rev. Mr. Wright's report for details. I cannot forbear mentioning the high qualifications of Mrs. Wright, as a competent teacher, and as a lady eminently suited to improve the female pupils of this school. The system of instruction is intended to prepare the girls for usefulness in life, giving to them, in addition to a knowledge of letters, instruction in housekeeping and all necessary household affairs; and also needle work, knitting, cutting out and making clothes, the management of the dairy, and in fine every thing that pertains to prudent management and thrifty housekeeping. The whole discipline of the school is good, and every opportunity offered to the student to obtain a useful education for the practical every day occupations of life. That these high privileges and advantages are duly estimated is evident, from the numerous applications for admission to the school.

The female school at Wheelock is put into operation in advance of the other schools, under the appropriation of the Choctaw general council; this is owing to the fact of suitable buildings, teachers, &c., being ready prepared there. The other female schools designated in the act of the general council are expected soon to go into operation.

The report of Mr. Olmstead, one of the treaty teachers, is made to embrace not only his own immediate school, but the American board of mission schools in the nation. The labors of the missionaries have not been in vain among the Choctaws; the general improvement, not only in education, but also in morals and temperance, may be traced to their untiring energy and industry in the great cause in which they are engaged.

The report of Rev. Cyrus Kingsbury, of the school at Pine Ridge, the place of his residence, is very interesting. This school is taught mainly by Miss Arms, a young lady of high attainments. Mr. Kingsbury is one of the pioneers among the Indians; his genuine piety and labors have won for him the universal esteem of all who know him. You will find, also, the letter from the Rev. Cyrus Byington, a missionary for many years among the Choctaws, both before and since their removal from Mississippi. He is thoroughly acquainted with the Choctaw language, and has translated some portions of the Scriptures, with various other useful books, which have been printed and used through the nation.

You will also receive the report of the Rev. Mr. Gregory, a missionary of the Methodist church; his labors have been itinerant, and a large and highly respectable number of Choctaws are members of the Methodist church.

There are also reports from Messrs. Wilson, Potts, and Rind, three teachers under the 20th article of the treaty of 1830. The other teacherships under the treaty of 1825 have expired by limitation, and are only supported from funds remaining on hand. These schools are expected to close with this year. Their reports are submitted herewith.

I will now bring to your notice Spencer academy, which I consider to be the leading school in the nation; it is so only from its location and endowments, supported as it is by a fund of $6,000 permanent annuity for educational purposes, which is now, for the first time, expended in the nation. This, together with some additions from other funds, will make, annually, between eight and nine thousand dollars to this institution. The buildings are now erected, capable of boarding sixty or seventy boys, with a school house. A crop was made during the past season, and a garden cultivated, with a view to commence the school on the 1st day of January, 1844; and probably a few scholars may be received prior to that time. This academy is to be conducted on the manual labor system; the farm attached to the school will be large, and will produce a great portion of what will be consumed at the institution. As the school progresses, workshops are to be erected, the labors and profits of which will be added to the funds of the school, and will thus enable the number of scholars to be increased.

The superintendent has not yet reached the school; he is a Presbyterian clergyman, and said to be well qualified for the station. Much will depend upon his efficiency in conducting so responsible a charge. The principal teacher, Mr. William Wilson, who has for several years taught one of the treaty schools in the nation, and now transferred to the Spencer academy, is a gentleman highly qualified for that appointment, by a thorough classical education, and possessing great moral worth, and will no doubt perform his duties satisfactorily. He is favorably known to the Choctaws, and richly merits the esteem in which he is held by all who know him.

Other teachers, as they may be required, will be engaged, and can be readily found among the Choctaws themselves. A board of trustees, four in number, of which I have the honor to be one, are appointed by the general council for Spencer academy. A report will be annually submitted, by the trustees, to the War Department and general council.

The books, clothing, bedding, agricultural implements, and such furniture as could not be made at the school, were purchased in the Eastern cities; the greatest economy has been observed, while every thing proper or necessary for such an establishment will be procured. It is a seminary of learning of which the nation is proud; the plan is their own, the expenditures are in their own country, and the whole under the control and observation of men of intelligence. When fairly in operation, this institution will be capable, from its funds, to educate a hundred boys, and will be increased by all the means it can command. The site where the buildings are erected is upon a beautiful eminence, with a fine spring of water, ten miles north of Fort Towson; the location is free from low or swampy lands, and promises to be healthy. With all its resources and advantages, great and good results are justly anticipated by the friends of education among the Indians.

The forty youths heretofore educated at the Choctaw academy in Kentucky, under the treaty of 1830, are now divided so as to educate ten each at four of the principal colleges in the United States. These forty will be selected with a view to prepare them for teachers in their own institutions, by giving to them a thorough classical education, and enable them to occupy stations of eminence and usefulness among their people.

Such, briefly, are the plans adopted by the Choctaws for the education of their people; and there, at present, is no reason to be seen why their meritorious efforts should not be successful. They will no doubt receive all proper and suitable aid and encouragement from the department in carrying out the great object contemplated.

Respectfully submitted.

W. ARMSTRONG,
Acting Superintendent of Western Territory.

T. Hartley Crawford, Esq.,
Commissioner of Indian Affairs, Washington, D. C.

No. 32.

Bethlehem, *September* 5, 1843.

Sir: I herewith transmit to you the report of my school for the past year. You will see that 13 have attended—12 males and 1 female. The children have not learned as fast as I could wish. The parents do not take that interest which they should, and they frequently stay away for days at a time, and the parents do not send them to school as regularly as they ought. It has been very dry during the summer, and, in consequence, the crops are not as good as they were last year. There is a good improvement in the people in my neighborhood in agriculture and religion. Many of them are, I believe, good Christians. I have devoted most of my time when not in school in visiting and preaching to the people. Many of the Indians are members of the temperance society, and drunkenness is not as frequent as it used to be.

I am, &c.

SAMUEL WORCESTER.

Capt. William Armstrong.

[Mr. Worcester is a Choctaw.]

No. 33.

Puckshenubbe District, C. N.,
August 2, 1843.

Sir: Another year has rolled its ample rounds, and it becomes my duty to inform you of what I have been doing.

This is my eighth year in the Choctaw nation. I have labored with them as teacher and as missionary. During the period above stated, I have had many opportunities of visiting different parts of the district in which I live. It is, indeed, a beautiful country, abounding in creeks and springs, having a fertile soil. Its vast prairies, with many elevations almost to mountain heights, skirted with fine timber, present to the eye an appearance of great beauty. In those prairies, large groups of cattle and horses may be seen feeding on a spontaneous but luxuriant growth of grass. Passing from the prairies to the timber, you may there see farms of different sizes, generally having good fences and well-cultivated crops. The Choctaws have learned to build comfortable cabins, which is conducive to health; it also shows the march of improvement amongst them. Some of the full-blooded people are raising wheat, as well as corn and vegetables. They are also learning mechanism. Some stock ploughs, fill wheels, make water pails, and other articles, very neatly. It is a cheering fact that the people generally are improving. For the last year, my school has been much more interesting than at any former period. The children have for the most part attended regularly, and have improved as much as could be expected, from the disadvantages under which we labor part of the year. I had to teach all the small children out of one book—there was none to be had in the country. Although the merchants bring a great many books, such has been the demand for them that they had not a supply. By referring to my last year's report, you will find that I have an increase of scholars. Some of the children live at the distance of fifteen miles; but they bring provisions, and have a fixed house near the school house, and have remained during one-half of the session without being absent from school, except from sickness.

The crops will not be so abundant this year as the last, on account of the rainy spring and the early drought.

We have abundant reason to be grateful to Divine Providence for the many favors and mercies with which we have been blessed since we left our friends and acquaintances, and repaired to the Western wilds, to take up our abode among the aborigines of our happy land, that we might be instrumental in doing them good, temporally and spiritually. Many of our neighbors have left the shores of time, and entered the vast ocean of eternity. Some of them have met death cheerfully, giving evidence in their expiring moments that the labors of the missionary have not been in vain.

Very, &c.

H. G. RIND.

Major William Armstrong.

No. 34.

Good Water, *August* 10, 1843.

Dear Sir: The time has arrived when it becomes my duty to forward the report of the school at this place; and I am happy to do so, from the fact that it has never been in so prosperous a condition in a previous year. The scholars have made good improvement in their studies, and in their deportment gained our esteem and respect. Our number has increased, and their attendance has been more regular, though, in this respect, the scholars have suffered great loss. I have stated the number of days lost to each scholar. This method shows at once the irregularity. Some did not enter the school until late in the spring. The school has been kept nearly ten months the past year. It was vacated for a short time in the winter, on account of removing the school house to a point more convenient; and it was vacated in April one week, on account of the meeting of the Indian presbytery at this place. Temperance is gaining ground in this district, and the blessed fruits are ripening for the harvest. Let temperance abound, and this people will rise from their ignorance and degradation. Industry *increases* just in proportion as intemperance *decreases*. A fine grist mill, turned by horse power, has been put here in this vicinity this summer. But, above every other blessing, the gospel of our Lord Jesus Christ is triumphing over darkness and error, and revealing sources of happiness unknown before.

With much respect, &c.

EBENEZER HOTCHKIN.

Major WILLIAM ARMSTRONG,
Acting Superintendent, &c.

No. 35.

Report of the school on Red river.

Number of scholars attending the school, 30, viz: 13 boys and 17 girls.

The Sabbath school has been continued through the year, and well attended. Between 30 and 40 usually attend as readers, most of them young men and young women. About 15 of them read both Choctaw and English.

We have public worship every Sabbath, and meetings are well attended.

ANNA BURNHAM.

Major WILLIAM ARMSTRONG,
Acting Superintendent, &c.

No. 36.

PINE RIDGE, *October* 18, 1848.

DEAR SIR: Presuming that you will be pleased to have a report from those schools which are supported by the missionary board, as well as from those sustained by public funds, I enclose a report of the school at this place, together with a brief notice of my own labors.

The particulars relative to the school you will find in the accompanying papers.

My own labors as a missionary have been much the same as last year. Mr. Hotchkin and myself have alternately visited the settlements between this and the Washita once a month. The whole circuit embraces a tour of about two hundred miles, within which are ten places for preaching. The congregations have generally been much as they were last year. In the cause of temperance there has been a very considerable advance. It is, however, to be regretted that the efforts of the Choctaws to promote temperance have not been sustained by the example and influence of some of the white population residing in the country. Especially had we hoped that all bearing a commission from the United States would have lent their aid to so good a cause.

There are three churches under the care of Mr. Hotchkin and myself, within the bounds where we preach, viz:

	Members.
Pine Ridge	134
Mayhew	36
Chickasaw	125
Total	295

Of the above, 84 were added last year.

With gratitude we acknowledge the goodness of the Lord in preserving us from wasting and fatal sickness, whilst others have been cut down in the midst of their labors. We are also grateful for the encouragement granted to our efforts for the improvement of the Choctaws.

I am, &c.
C. KINGSBURY.

Captain William Armstrong,
Superintendent of Indian Affairs.

No. 37.

Providence, C. N., *August* 31, 1843.

Sir: The accompanying documents are the reports of the school under my charge for the year ending August 31, 1843. In no former year have the students made greater proficiency than the past. So far as my own knowledge extends, there appears to be a greater desire on the part of parents for the education of their children than heretofore. The studies pursued, as you will see by report, have been grammar, geography, arithmetic, &c.

Their aptitude to learn has been satisfactorily tested the past year, and would compare well with any schools in a civilized land, when we take into consideration the advantages and disadvantages under which they live. I will give a few examples, that you may know what an Indian youth can do when he and she will apply themselves. Colbert Carter's acquirements, when he commenced school, were only reading, writing, and a very limited knowledge of the first four rules of arithmetic. He began with the multiplication table, and has done every sum in Smiley's Arithmetic, with the exception of a few in the promiscuous questions. In addition to this, he has obtained a good knowledge of grammar and geography; and in the last month he attended to book-keeping, and obtained a good knowledge of single entry, and has made considerable progress in sacred history.

Wyat Coyle has obtained, during the past year, a very correct knowledge of grammar, geography, and arithmetic, and would be an honor to any school, even in a civilized land.

Rosanna Coyle and Patsey Going commenced the study of grammar and geography last fall, and have acquired a very correct knowledge of them, in addition to attending to other studies.

You will perceive by the report that 39 students have attended the school during the past year; nineteen of whom left previous to the vacation, some of whom it is expected will return during the fall. You will also see that twenty-three lived in my family during the year, nine of whom I boarded gratuitously and clothed partly. For the board of the residue I am to receive $4 per month, to be paid in any kind of produce they may have to spare.

In addition to the school, I have endeavored to teach the Indians the principles of religion; and I am happy to say that it has not been in vain, as many of them have become, I trust, devoted Christians.

The cause of temperance has taken deep hold upon the feelings of the people, and many of the most influential men in the nation have enlisted under the temperance banner. Habits of industry are more prevalent than formerly; and, though the season has been very unfavorable, I think a sufficiency will be raised for their consumption.

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By your obedient servant,

RAMSAY D. POTTS.

Captain William Armstrong.

No. 38.

Pine Ridge, *July* 30, 1843.

Sir: By the foregoing report, you will find that the whole number o children who have been under my instruction is 36. Of this number, 19 were of mixed blood—only 6 of whom spoke English; the remainder were full Choctaws. The average daily attendance was 19. There was a very great want of suitable books. A good supply will be provided for the next session.

The improvement of the scholars has been in proportion to the regularity of their attendance. A very commendable desire is manifested by most of the parents for the improvement of their children.

Very respectfully, &c.

J. P. KINGSBURY.

Captain W. Armstrong,
Superintendent of Indian Affairs.

No. 39.

Stockbridge, near Eagletown,
September 28, 1843.

Dear Sir: This letter has been due for some time, and I commenced a letter to you some weeks since, but I was called away to be with the sick, and since then have had distressing sickness in my own family. Mrs. Byington is now slowly recovering from an attack of fever, which brought her down very low, but we have great reason to be thankful that we are all spared.

We have prosecuted our usual missionary labors during the year past.

I have preached in four different places in the nation, besides preaching regularly once in two months at Ultima Thule, in Arkansas. Last year I prepared, with the aid of others, an almanac in Choctaw and English for the current year. Three hundred copies were printed. I have also, so far as I have been able, attended to the translation of the Scriptures from the Old Testament. By an arrangement made with the Rev. A. Wright, in our efforts at translating, he will give his attention more particularly to the New Testament, while I devote my time to the Old. Much study is required in making myself well acquainted with the original language of the Old Testament, as well as with the Choctaw.

We hope our labors among this people are not in vain. Of the school taught at this place, I presume Mr. C. C. Copeland, the teacher, has forwarded you a report. Five of the scholars were boarded in my family, and in a majority of the instances gratuitously.

From necessity, I am called to be much employed for the relief of the sick, there being no physician nearer than Fort Towson. I think I may safely report to you that the cause of temperance is honorably and successfully sustained on Mountain fork and Little river. There are, it is true, a few warriors among the Choctaws, yet, who will run over the line to find means of intoxication, but many of these are become ashamed of their conduct. It is proper for me to commend to you the captains in this neighborhood as strong temperance men. Our educated warriors, and the white men among us, are all temperance men. It cannot be said of the educated Choctaws and white men near me that they attempt to thwart the efforts of the temperance advocates.

The people have attended to their farms with their usual diligence and quietness. There has been less of ball playing on a large scale this year than usual. Some of my neighbors are making additional improvements, such as the erection of stone chimneys and the purchase of sheep. There are two cotton gins among us, and a water mill is now being erected. During the year there have been several removals from this vicinity, among them two captains, and yet there is around me a large Choctaw population remaining.

I have a full share of labor for my strength and health; to provide for a family, to act the part of a good neighbor, preacher, physician, in this sickly land, is as much as I am able to do.

I have been requested to have some care over the Gyanubbe female school, but have declined it, on account of my many present and pressing cares, as well as the feeble state of health granted us—hoping, too, that some young, active, and faithful person could be found, who would do much better.

But may the Lord guide us—all good things come from him. He has blessed this tribe much since you first knew us. I hope the next fifty years will be better still.

May your life be spared, and your efforts be blessed. And although this letter is called for as an official one, I do not forget you as a friend, and cherish the hope that you may be again with us under our roof.

May the Lord be your shield and reward.

From yours, with much respect,

CYRUS BYINGTON.

Capt. William Armstrong,
Acting Sup't West. Ter., Choctaw Agency.

No. 40.

WHEELOCK, *July* 3, 1843.

DEAR SIR: I herewith send you the report of the state of the Wheelock female school for the year ending July 1, 1843. You are aware that the national council, in November last, among other appropriations, made one for the support of a female seminary at this place. The intention of the council has been carried into effect. The pupils have been selected, and were placed on the appropriation on the first day of May last, 1843.

In order to give satisfaction, and to avoid the appearance of partiality, the selection was made from the several clans into which the people are divided. Seven were taken from each of the following clans, viz: the Ahepotukla, the Oli-le-fe-leia, and the Ok-la-ha-nali, and three from the Uri-he-sahe clan, making twenty-four in all who were placed on the appropriation. The selection was made from a list of about fifty applications for the privileges of the school. Only one was taken from a family. Seven only of those who had previously belonged to the school were placed on the appropriation—the seventeen others, with very few exceptions, being entire new scholars. The selection I believe has given satisfaction, and the school has commenced under favorable auspices.

Mr. H. K. Copeland and wife reside at Wheelock, and assist in boarding and taking care of the children. Mr. Copeland's house is about forty rods from my own dwelling. The children, in our respective families, are kept separate when out of school. This arrangement we deemed preferable to having all the children board at one place.

As a part of the buildings necessary for the school were already erected with funds of the American board of commissioners for foreign missions, and as a part of the necessary stock was on hand, belonging also to the American board, I have engaged to put up the remaining buildings, and furnish what more stock may be needed, with funds of the same society, without encroaching upon the appropriation made by the nation. By this arrangement, the buildings and stock will be the sole property of the American board of commissioners for foreign missions, and the whole of the appropriation from the first be expended on the school. It was also further stipulated, between the committee acting on behalf of the nation, and myself, acting on the part of the American board, that that body, in addition to the buildings and stock, aid in sustaining the school, and contribute yearly in the proportion the Methodist Episcopal missionary society are required to aid.

The gospel, like the leaven hidden in the measure of meal, is exerting a silent but restraining and transforming influence. The day-spring from on high hath visited this people, giving light to them that sit in darkness and in the shadow of death, and guiding the feet of many into the way of peace. The church at Wheelock consists of one hundred and sixteen members, twenty-six of whom were added during the last year. There is an increasing attention to the preaching of the word. There are five preaching places connected with this station. At two of these places, Wheelock and Red River, public worship is held every Sabbath. In the absence of the pastor, the services are conducted by the candidates for the ministry or elders of the church. There are three natives under the care of the presbytery, studying for the ministry; and two of these are members of the Wheelock church, and one of them an elder. Two of them received a very respectable education in New England, and the other was several years at school in Henrietta, Ohio. They are all pious, devoted men, and at no distant period will be licensed to preach the glad tidings of salvation.

I also forward you the report of the school taught by Miss A. Burnham, on Red river. This, with the two papers relating to the school at Wheelock, will, I trust, furnish you with the facts necessary to be imbodied in your report to the War Department.

Respectfully and affectionately,
ALFRED WRIGHT.

Capt. WILLIAM ARMSTRONG,
United States Agent.

No. 41.

Extract from the annual report of A. M. M. Upshaw, Esq., U. S. agent for the Chickasaws.

"In the Chickasaw district there is no school, but some few of the half breeds send some of their children to the missionaries, none of whom are in the Chickasaw district. I think there are not more than seven or eight children going to school in the nation. The Chickasaws have some boys at Colonel R. M. Johnson's school, in Kentucky; and, from letters I have seen from the boys, show evident marks of improvement. But I am, and so are the Chickasaws, very much in favor of a school in their own district, on the manual labor plan, which plan they hope the Secretary of War may make as soon as convenient. The boys went to Kentucky because there was no shool here; and the boys had arrived at an age when they had no time to spare. Those boys that have been there a few years, and returned to their nation, are very much improved—much more improved than could have been reasonably expected.

No. 42.

QUAPAW MISSION, *September* 18, 1843.

SIR: Having obtained permission and received encouragement from you to proceed with our missionary operations, I take the liberty to report to you the state of the Indian school under my care in the Quapaw nation.

The school was opened, on the 27th day of March last, with nine scholars, which soon increased to sixteen, and subsequently to twenty-three. The average number of scholars in constant attendance, from the commencement of the school until the present time, is about sixteen. The children all began with the alphabet, having, as some of the oldest boys informed me, never before seen a book. They could neither speak nor understand a word in English language. They can now spell in one, two, and three syllables, and understand many things in common conversation, and are learning to speak the English language much faster than was anticipated. The school is conducted on the manual labor plan. The children board at the mission, and are supported by the missionary society of the Methodist Episcopal church and individual donations.

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We hope to have means in a few months that will enable us to make additional improvements, and to board, clothe, and instruct at least twenty or thirty children.

Very respectfully, &c.

S. G. PATTERSON.

Col. B. B. R. Barker, *Sub-Agent.*

No. 43.

Creek Agency, *September* 5, 1843.

Sir: In compliance with the regulations of the department, I have visited and inspected the school under the charge of Doctor W. N. Anderson several times during the past year, and the school at the Cassita Square, under the charge of Mr. John R. Baylor, once since its establishment in July last. The reports from the principals of those schools will show the number of scholars (about fifty) who are pretty regular in attendance, and the studies they have pursued. They both present, in a strong light, the difficulty of securing regular attendance in their pupils, owing to the impossibility, under the present mode of tuition, of furnishing meals for the scholars at mid-day, as the irregular mode of living of the Indians, generally, does not enable the children to take their meals with them.

From my own observation, I am decidedly of opinion that two large schools in this nation, one at this agency and the other at Tuckabatchee town, on the Canadian, provided with a principal teacher, of liberal education, who shall be at the same time a minister of the gospel, with a competent number of sub-teachers under his supervision, and having means prepared for boarding the scholars, will do ten times the good that could be effected by a number of small establishments dispersed over the country. If the whole Creek fund was applied here, with the unexpended accumulation of it now in the Treasury, it would be sufficient to erect buildings sufficient for the accommodation of the teachers and fifty boarders, and for defraying the whole expense of the establishment. A system of school discipline could then be enforced, especially as regards regular attendance, the greatest barrier to their advancement, and the scholars would insensibly fall into the habits and manners of the whites, from living constantly at the school, while, by the day-school system, they are exposed to the influence of the Indian habits, by spending so much of their time at home with their parents and playmates. To make proficiency in learning or civilization, it is necessary they should be entirely taken away from their parents, which can only be done by the boarding-school system. In addition to the boarders, all the children of the neighborhood, that could not be accommodated as boarders, could go as day scholars, who would doubtless profit by the example of regularity and diligence which could be enforced on the boarders. I could enlarge very much on the subject, but only desire at the present time to set forth the advantage of a system by which large masses of scholars might be taught at boarding schools, and to show the disadvantages of the day-school plan. In every point of view, a large establishment, especially among the Indians, is better than a small one; there will always be found in it more emulation, system, spirit, and efficiency, and I shall be much pleased to find that the Commissioner takes the same view of the subject that I do; and will, in the event of the whole Creek fund being sent here, authorize such a disposition of it as I have proposed.

I am, sir, very respectfully, your obedient servant,

J. L. DAWSON, *Creek Agent.*

Captain W. Armstrong,
Acting Superintendent W. T., Choctaw Agency.

No. 44.

Creek Agency, *September*, 5, 1843.

Sir: In compliance with your requisition, the following statement respecting the school under the charge of myself and wife has been prepared:

Little change in the number of scholars has occurred since our last annual report.

We have had thirty-eight scholars, in all; of these, only about twenty have been regular in their attendance. Those that have been regular have made good progress in all the branches to which they have attended; the others have learned comparatively little.

The following branches have been taught, viz: English grammar, arithmetic, reading, writing, and spelling. Of the above pupils, twenty-seven are males and eleven are females.

I am every year more convinced of the inadequacy of the present system of education to the wants of this people, and the necessity of adopting some plan by which the scholars could be boarded at the school, and caused to attend regularly. If the intelligent part of the nation were compactly settled, good schools would be supported; but, unfortunately, this is not the case.

There is a large portion of the nation that have not enjoyed the advantages of education, and have made little advancement in the arts of civilized life, and consequently do not prize the advantages of education properly; as such, when they are convenient enough to school, they leave it entirely to their childrens' choice to attend school or not.

I am pleased to be able to inform you that the cause of education is gaining rapidly; and if I had the means to board, our school would be full and well attended. I feel well assured, that if the children of the indigent could be furnished with dinner each day, it would be a sufficient inducement for them to attend regularly, which could be provided at a small expense. I think this plan worthy of trial, and if it should prove ineffectual it could be abandoned.

Very respectfully, your obedient servant,

W. N. ANDERSON.

Captain James L. Dawson, *Creek Agent.*

No. 45.

School House, Cassita Square, *September* 5, 1843.

Sir: In obedience to your instructions, I came here on the 1st of July, to ascertain if the number of scholars which could be procured would justify the establishment of the school, in conformity to the wishes of the Creeks who applied for it. I found, on inquiry, that a school could be formed of about 20 scholars, (since increased to 35,) some of them half-breeds, partially taught, but chiefly full-bloods. Since my arrival here I have given close attention to their instruction, and their progress, though slow, has been such as to give hope and encouragement for the future. With those entirely ignorant of English, progress will necessarily be very slow. But a beginning has been made, and the first great object advanced—that of subjecting them to habits of attention and discipline. These secured, the final object must be accomplished in due season. It is exceedingly difficult to get regular attendance, especially as the scholars must eat in the middle of the day; and there is by the present system no provision made for them. The Indian habits are so irregular that but few are enabled to bring provision with them. An arrangement by which one of the neighboring Indian families could give the children their noonday meal would be judicious. In the first outset, it is difficult to control Indian children, at best. If they are punished they will not come back to school; and their parents consent with an ill grace, if at all, to punishment; so that every thing at the outset is to be done by conciliation and policy, through the agency of the chiefs of the town operating on the parents. I feel confident, however, of mastering these slight difficulties, and making the school efficient and useful.

Respectfully, your obedient servant,

J. R. BAYLOR, *Teacher.*

Captain J. L. Dawson, *Creek Agent.*

No. 46.

Tahlequah, Cherokee Nation, *June* 16, 1843.

Respected Sir: By request, I write and address this communication to you, informing you of the state of the Methodist society in the Cherokee nation.

This nation lies within the bounds of the Arkansas annual conference, and it is divided into two circuits—the upper and lower. The last conference, which was held in November last, appointed twelve of its members, eight whites and four Cherokees, to labor in this nation, for the benefit of the Cherokee people. Three of the white preachers were appointed, with the view of being employed in the public schools in the nation, by the earnest solicitation of the members of the Methodist society. But, in consequence of the partiality and bias of the superintendent of public schools in the nation, their designs have been entirely frustrated, and the wishes of the people not realized. There are also fifteen local preachers in the nation, making in the whole twenty-seven. There are about fourteen hundred members belonging to the Methodist Episcopal church in the Cherokee nation at the present time, and the societies generally are in a prosperous condition.

There are Sunday schools in many of our societies, all in a flourishing condition. In some of these the instruction is given in the Cherokee language, and in some the English. This probably is as correct information as I am able to give.

Yours, very respectfully,

J. F. COLLINS.

P. M. Butler, Esq., *Agent.*

No. 47.

Fairfield, *June* 19, 1843.

Dear Sir: In reply to your inquiries of the 17th instant, I would say that at this mission station there reside, as missionaries, myself, Mrs. Butler, and Miss Esther Smith. Miss Smith is the teacher of the school. For the last two years there have been forty different members, and the average number has been twenty-five. There are now almost daily eleven girls and fourteen boys in attendance. In my family there are four children of my own; one Cherokee young woman who received her education at Dwight; one orphan Cherokee girl who has learned to read and write, but for several years has been afflicted with weak eyes, which at times render her nearly blind; also, three Cherokee girls who attend the school.

I have a small farm of about thirty acres. The labor on this farm is done by Cherokees.

About a year since we engaged in building a house for public worship. Some opposition to this was manifested by some white citizens in the neighborhood. But we have nearly completed a comfortable house for worship, fifty feet long by thirty wide. About four hundred gratuitous days' labor have been done by the neighbors on the house, besides thirty days' team work.

My own time is mostly spent in the practice of medicine, for which I receive but little compensation.

Our church here consists of seventy-four members, mostly Cherokees. We have also a Sabbath school of thirty members.

Very respectfully, &c.
ELIZUR BUTLER.

Governor P. M. Butler.

No. 48.

Park Hill, *July* 5, 1843.

Sir: In compliance with your request, I take pleasure in furnishing you with the following brief report relative to the establishment and progress of common schools in the Cherokee nation. It is evident that a great deal cannot be said at present respecting the progress of education among us by common schools, because but eighteen months have yet elapsed since our common school system went into operation. I rejoice, however, that what little I can report is of a favorable and encouraging character.

Our law which authorizes the establishment of schools was passed in December, 1843, (1841?) and, as the nation is divided off into eight districts or counties, the schools are distributed according to the following ratio, viz: Delaware, Going Snake, and Flint districts, two schools each; Skin Bayou, Illinois, Canadian, Tahlequah, and Saline districts, one each; which make in all eleven schools that are supported out of the interest of the national school fund due the nation.

During the last year, ten out of the eleven schools were in successful operation, and something over four hundred children were collected, and received instruction in several of the elementary branches of education.

This year, all the schools provided for are in operation, and the average attendance at the several schools is about the same as last year, which will swell the whole number of scholars to near five hundred. But these eleven schools thus established and supported by the nation, with the several missions and other neighborhood schools, do not more than half supply the demands for schools throughout the nation. The interest felt in the schools, and in education generally, by the people, I think, is rapidly increasing; and no doubt as this interest increases efforts to add to the number of schools will be made by the people themselves. At present, every thing is found, and all the expense borne by the nation in keeping up the several schools, with the exception of building and finishing off the school houses, which is done by the people where any school may be established.

You will observe that five hundred and thirty-five dollars are allowed each school, for the support of teachers, the purchase of books, and to defray other contingent expenses; and, also, two hundred dollars for the support of orphan children while attending school; and from five to ten orphan children are thus supported at each of the several schools annually.

Our school teachers are all white men, with the exception of two, who are Cherokees. One of the white men is a citizen by marriage. The white teachers are nearly all from the Northern States. The branches taught are reading, writing, arithmetic, geography, English grammar, history, and in some instances book-keeping.

I am yours, in haste,

S. FOREMAN,

Sup't of Common Schools in the Cherokee Nation.

P. M. Butler, Esq.,

Cherokee Agent.

The missionaries of the United Brethren's church have under their care a church of about 80 Cherokees and two schools—one near Beattie's prairie, in charge of Rev. M. Vogler and Mr. D. F. Smith, numbering from 20 to 30 scholars; the other on Spring creek, in charge of Messrs. G. Bishop and H. Ruede, numbering from 10 to 15 scholars.

No. 49.

Dwight, Cherokee Nation, *June* 24, 1843.

Dear Sir: Your favor of the 17th, requesting information respecting our school, was duly received, and I now cheerfully hasten to answer it. During the last year we have sustained an interesting school of from forty-seven to fifty girls. About forty-five have been regular boarding scholars. Two teachers (Mr. and Mrs. Day) are regularly employed in their instruction.

Yours, very respectfully,

JACOB HITCHCOCK.

Hon. P. M. Butler.

No. 50.

MOUNT ZION, *July* 18, 1843.

DEAR SIR: I should have attended to your request, by Mr. Duval, sooner, but for ill health, though I have nothing of special interest to communicate. This was not designed for a large mission station, nor for a boarding school. My object was to teach a neighborhood school, with the assistance of Mrs. Butrick, a part of the year, and devote the other part to itinerating. A year last winter we commenced school with favorable prospects. The whole number of scholars was about fifty, though the average number, I presume, did not exceed thirty. Before the expiration of winter, however, I was attacked with a pulmonary complaint, from which I have not yet recovered. I employed a teacher to continue the school one term, at the rate of $20 per month. In September last Mrs. Butrick and myself again attempted the care of the school, and continued till the middle of November, when I was again prostrated by a more severe attack, and am still a mere invalid, though I have lately commenced preaching, and attending school with Mrs. Butrick, she performing most of the labor. We have not far from twenty scholars. In this vicinity the children are peculiarly interesting, and desirous of improvement.

Morality and religion have made some advances in the course of three years. Their ball plays were frequent on the Sabbath, and whisky, like a resistless torrent, seemed to bear away the population before it. Now, a great part, I think, of the community live agreeably to the principles of total abstinence, and *many* of the citizens attend religious worship on the Lord's day. It is, however, greatly to be lamented that this sacred day is by no means observed as it should be. Being the *bulwark* of religion, morality, and good order, we must readily suppose that United States agents, and officers of every description, will lend their aid in promoting the sacred observance of this holy day, in the private and public worship of God. That many of the Cherokees are making laudable improvement, I need not say; it is evident to every observer.

Respectfully, yours,
D. S. BUTRICK.

Governor P. M. BUTLER, *Cherokee Agent.*

No. 51.

DWIGHT, CHEROKEE NATION, *July* 3, 1843.

SIR: In answering your inquiries respecting the school, and other missionary operations of the American board of commissioners for foreign missions among the Cherokees, it may not be amiss to repeat much of what I wrote last year, as that report did not reach you in season.

The board have at present four stations—Dwight, Fairfield, Park Hill, and Mount Zion. Besides these, a native preacher is stationed at Honey Creek.

The missionaries and assistants now at these stations, are—

At Dwight: Mr. Jacob Hitchcock, superintendent, who joined the mission in 1820; Mrs. Hitchcock, and Miss Ellen Stetson, in 1821; Miss Hannah Moore, Mr. Kellogg Day, (teacher,) Mrs. Day, (teacher,) in 1841.

At Fairfield: Rev. Elizur Butler, M. D., who joined the mission east of the Mississippi in 1830, and west of the Mississippi in 1839; Mrs. Butler, east of the Mississippi in 1827, and west of the Mississippi in 1839; Miss Esther Smith, (teacher,) west of the Mississippi in 1832.

At Park Hill: Rev. S. A. Worcester, who joined the mission east of the Mississippi in 1825, and west of the Mississippi in 1835; Mrs. Worcester, east of the Mississippi in 1825, and west of the Mississippi, in 1839; Miss Nancy Thompson, east of the Mississippi in 1826, and west of the Mississippi in 1837; Miss Mary Avery, (teacher,) west of the Mississippi, in 1839.

At Mount Zion: Rev. Daniel S. Butrick, who joined the mission east of the Mississippi in 1818, and west of the Mississippi in 1839; Mrs. Butrick, east of the Mississippi in 1826, and west of the Mississippi in 1839.

At each of these stations, except Mount Zion, a school has been taught the principal part of the year past; at Mount Zion, only between two and three months. The only *boarding school* is at Dwight; and only there is the school made the leading object of attention. At Fairfield and Mount Zion the leading object is the preaching of the gospel. Medical practice, also, requires much of the time of the missionary at Fairfield. At Park Hill, besides the preaching of the gospel, a leading object of attention is the preparation and publication of books in the Cherokee language.

The school at Dwight is at present a school for girls only. The whole number of scholars within a year past has been sixty-one. Average attendance about forty-seven, all Cherokees. Of the whole number, fifty-six have been boarded at the station, at the expense of the board. Five have boarded with their parents, or elsewhere. Of the school at Fairfield, I suppose Doctor Butler will give you an account. At Park Hill, the whole number of scholars has been forty-seven, and the average attendance not far from twenty—all Cherokees except five, who are my own children. At Mount Zion, the attendance was very irregular, as many as fifty having attended more or less, while yet the average may not have exceeded fifteen.

Besides the missionaries, the board have under their care two native preachers, Rev. John Huss and Rev. Stephen Foreman. Mr. Huss is supported by the board, and has the care of a church at Honey Creek. Mr. Foreman is my assistant in translating, and is supported partly by the board and partly by the Cherokee nation, in the capacity of superintendent of schools.

The printing press at Park Hill was first set up at Union, in the year 1835, and removed to Park Hill in 1837. Since it was first set up at Union, the following books and pamphlets have been printed:

In the Cherokee language.

	No. of copies.
Child's Book, 8 pages, 18mo - - - - - -	200
Cherokee Primer, 24 pages, 24mo, (two editions) - -	4,500
Catechism, 8 pages, 24mo, (two editions) - - -	3,000
Select Passages of Scripture, 24 pages, 24mo - - -	5,000
Cherokee Hymns, 48 pages, 24mo - - - - -	5,000
Cherokee Hymns, 68 pages, 24mo - - - - -	5,000
Cherokee Almanac for 1836, 24 pages, 12mo - - -	450
Cherokee Almanac for 1838, 24 pages, 12mo - - -	500
Cherokee Almanac for 1839, 36 pages, 12mo - - -	2,000
Cherokee Almanac for 1840, 36 pages, 12mo - - -	1,800

	No. of copies.
Cherokee Almanac for 1842, 36 pages, 12mo	1,000
Cherokee Almanac for 1843, 36 pages, 12mo	1,000
Tract on Marriage, 12 pages, 12mo	1,500
Tract on Temperance, 12 pages, 12mo	1,500
Gospel of St. John, 100 pages, 24mo, (two editions)	6,500
Gospel of St. Matthew, 120 pages 24mo	3,000
Epistles of John, 20 pages, 24mo, (two editions)	8,000
Cherokee Laws, 54 pages, 12mo	1,000
Methodist Discipline, 45 pages, 24mo	1,000
Address on Intoxicating Drinks, 8 pages, 24mo	5,000
Message of Principal Chief, 12 pages, 24mo, (Cherokee and English)	1,000
Special Message of Principal Chief, 8 pages, 24mo, (Cherokee and English)	1,000

In the Creek language.

Child's Guide, 24 pages, 16mo	Number of copies not recollected.
Muscogee Teacher, 54 pages, 18mo	

In the Choctaw language.

	No. of copies.
Choctaw Friend, 190 pages, 12mo	3,000
Choctaw Reader, 126 pages, 12mo	2,000
Choctaw Constitution and Laws.	
Methodist Discipline, 48 pages, 24mo.	
Epistles of John, 27 pages, 24mo	1,000
Child's Book on the Soul, 16 pages 24mo,	400
Child's Book on Creation, 14 pages, 24mo	400
Bible Stories, 23 pages, 24 mo	350
Choctaw Almanac for 1836, 16 pages, 24mo.	
Choctaw Almanac for 1837, 24 pages, 24mo.	
Choctaw Almanac for 1839, 24 pages, 24mo.	
Choctaw Almanac for 1843, 24 pages, 24mo.	

We have also printed a small primer, in the Wea language.

All these, except the tract on Marriage, Cherokee and Choctaw Laws, Chiefs' Messages, Methodist Discipline in Cherokee and Choctaw, and the Wea Primer, have been published at the expense of the American board of commissioners for foreign missions, and by far the greater part for gratuitous distribution. Within the year past, I believe, we have only printed the later Cherokee Laws, Chiefs' Messages, Choctaw and Cherokee Almanacs, and the second edition of the Epistles of John. We are now printing 5,000 copies of the Acts of the Apostles.

The number of Cherokee members in the churches under the care of the board, as nearly as I can ascertain, is as follows:

	Members.
Dwight	29
Fairfield	65
Park Hill	22
Honey Creek	47
Mount Zion	28
Total	191

Of the amount expended by the board for "education purposes," I really have not the means of forming even a tolerable estimate. The sum reported by the Treasurer as expended for the Cherokee mission for the year ending August, 1842, was nearly $8,200. Perhaps the sum for the current year may be nearly the same. But what part of this should be regarded as expended for the purpose of education I dare not attempt to estimate.

Having the honor to be secretary of the Cherokee temperance society, I have better means than any other person to report the progress of that important association. The society was organized under its present constitution in the autumn of 1836. Its members sign the following pledge: "We hereby solemnly pledge ourselves that we will never use, nor buy, nor sell, nor give, nor receive, *as a drink*, any whisky, brandy, rum, gin, wine, fermented cider, strong beer, or any kind of intoxicating liquor."

On the list of signers to this pledge I find the names of 1,752 persons, of whom I recognise about 160 as white or black persons; and we may reckon about twenty-five or thirty more as such, whom I do not know and cannot distinguish by their names. This will leave about 1,560 Cherokees who have signed the pledge. How many of these have broken the pledge I cannot tell. Certainly not a few. But if we allow one-third of the whole number, which I take to be a very large allowance, it leaves more than a thousand Cherokees who abstain entirely from the use of intoxicating drinks of all kinds, and from all traffic in them; and I suppose a considerable number more could be found who are equally abstinent, and who only lack opportunity to add their names. I may add, too, that I hear of violations of the pledge much less frequently within two years past than formerly, and that though intemperance is still prevalent to an alarming degree, yet public sentiment seems to me more and more in favor of total abstinence.

Yours, very respectfully,

S. A. WORCESTER.

P. M. Butler, Esq.,
U. S. Agent for Cherokees.

No. 52.

Fort Towson, *April* 12, 1843.

Sir: The Methodist mission among the Choctaws in the country of Fort Towson has nearly closed its labors for the present year, and I am happy in having to inform you of its prosperity and success. The parsonage is located seven miles east of the fort, near to an excellent spring, and is comfortably improved. Our work is ministerial and pastoral, upon the itinerant plan, by which the poor have the gospel preached unto them. Our work embraces a large district of country, and our congregations are fifteen in number. These are scattered over a territory averaging about sixty by thirty miles. Our custom is to visit those places once in three weeks. The labor is performed by myself and a native preacher, who travels as my interpreter the present year.

I take pleasure in stating that we have not labored in vain, for much has been the happiness our people have enjoyed under the ministry of the word. Recently we have held several popular meetings, attended by from

300 to 500 persons, and the good order and decorum observed would have been respectable in any community. We trust that much moral improvement was made in the community. We have a Sabbath school in our several congregations, taught by natives; these are doing great good, as hundreds are learning to read the Scriptures in their own tongue; I have only to regret our inability to supply them sufficiently with books and apparatus. Many of our people are making considerable improvement in agriculture and the mechanical arts. From what we observe, we are compelled to view this people as hastening to a civilized state.

The greatest bane of the nation is intemperance; if that could be cured, this would be a prosperous and happy people, by the continuance of Government and missionary assistance, and under the smiles of God. Our society has commenced a mission (the present year) among the Chickasaws, and we entertain hopes that it will be useful.

This mission is supported entirely by the missionary society of the Methodist Episcopal church, at the expense of $650, to defray every expense accruing; and I will say it to the praise of our people and friends here, that they have paid some $80 to our missionary society the present year.

Sir, I have the honor to subscribe myself yours, respectfully,

ROBERT GREGORY, *Missionary.*

Major William Armstrong,
Agent of Indian Affairs.

No. 53.

Norwalk, Fort Towson Post Office,
Choctaw Nation, August 21, 1843.

My Dear Sir: A report of the schools taught in this nation, by persons under the care and patronage of the American board, will be made in the following remarks and tabular view.

The most interesting and prominent feature in public schools is the general determination to effect a change in the plan heretofore adopted, and which has been a guide for all the teachers of our Government in fulfilling treaty agreements between the United States and the Choctaws. It does not devolve on me to say what the merits of this change are. Many educated, benevolent, and public-spirited Choctaws have taken great pains to put their own school money so as to be available, and the value of it is estimated by the nation. I believe these benefactors of the youth, now marching forth to take the place of their fathers, are planning with the most disinterested motives. And should these plans be carried out, agreeably to those of the national council of 1842, great good it is hoped will be done; and when these men have left the stage, their children will enjoy the benefits of their labor. Now is an important crisis in our schools. Most of what I have to say of one will apply to all of them. Every feature is new, or expected to be new, to the children, when in fact there is but a shade of difference in point of instruction.

It appears to me desirable that something should be said or done to stimulate teachers to their work in the Western country. If to receive pay is the main object, less good will be done than when the heart beats with true philanthropy. Most of the teachers in this country came from far different society than that which surrounds them here, and the moral influence and the stimulus to excel, which is too common to be mentioned in civilized countries, too frequently lowers its dignity, and ceases to urge us on to new or improved modes of instruction; consequently, the children must live under the same old forms, and perform the same routine of duties, be it less or more. This will not do for this or any other age. Common sense teaches a new lesson every day; and if teachers in this country are not disposed to avail themselves of this faithful monitor, our Western country will be told in the scorn of others, instead of marching on manfully and cheerfully with a civilized world. Teachers need encouragement any where. In almost every instance they are employed by the public to educate a new generation. Private teachers are employed to gratify the feelings of some few individuals; such teachers seldom look for or expect encouragement any further than constant employment.

New cares, labors, and responsibilities, devolve on some of the teachers; they have the most difficult kind of teaching—that is to say, they must teach the children the English, which to most of the Choctaws is a foreign language. It is very difficult to teach a native to comprehend the meaning of English composition, written geography, or the relation of numbers, and correct pronunciation. I have found even that these youths acquire their own language easiest orally. There is no branch of English science they will acquire so readily as music in singing by rote. Most of them have a good musical ear, and some large choirs have sung pieces with a good degree of harmony and musical expression. I fully believe that a natural musical chant is a plain characteristic of an amiable disposition. Sacred music is most common, which is sung by public assemblies, religious concerts, and praying circles of both sexes. Such music is performed with more simplicity and expression of religious feeling during family prayers. It seems as if God indited the song as well as the prayer. I do not magnify the subject, but simply touch a few of its excellencies. Music, as a science, is neglected in public and private schools generally. A singing school need not be separate from other week day schools. Almost all children love to sing. God has given them this lovely element, which will show itself through every stage of education; and a school of young children is often calmed and governed by some harmonious musical expression. I have found no remedy better than music for stupor and drowsiness, which is unavoidably common in hot climates; I never failed to awake and fix the attention in this way. Other remedies often produce dullness of application, and in many cases fretfulness. Music regulates many evils in the life of children; it sweetens and cheers the hours, as they are quickly hurried to eternity.

I have had the pleasure of visiting the schools twice during the last year. There is a much more elevated view of education than at any former period. Parents and children look upon education as useful. They believe it to be an ornament and treasure for all who apply their minds to the study of useful books. Children do not feel that the task of learning a lesson is to please the teacher so much as to benefit themselves. The young of this nation cannot judge by comparison how much good an education will do them. There is but here and there one who has more than the simple elements of what an enlightened nation think to be an education. The teachers are supposed to have done all in their power to improve the minds and morals of the youth here, yet their work is cut short in five-sixths of the number committed to their care. They learn to read, write, spell, and solve a few simple numbers, when, at this important period of their education, they voluntarily leave, or their parents take them from school. The one-sixth remain, are benefited, and cheer the hearts of their teachers and friends. Those opposed to public education have drawn their estimate of its value from the five-sixths who have been educated imperfectly, and leave out of the account the one-sixth who in reality have obtained a plain education. This people have but few teachers, and it is impossible for them to do much more than they have done under past circumstances.

Those children who have been regular in their attendance in these schools have made great improvement, especially among the girls in the school at Wheelock. I think there is much sensible, practical, and decidedly useful knowledge acquired in that school. The girls are taught the plain lessons of life, graciously directing all their attainments for an eternity of bliss. A lovely little girl made up some linen, and took it to her father. The mother saw the work was done so well and neat, she doubted the veracity of her little seamstress. Knitting, netting, needlework in woollen, cotton, stitched linen for gentlemen, fancy needlework, and embroidery, are executed with skill and taste, which is designed to prepare them for the useful spheres of ladies, wives, and mothers. These girls have just commenced spinning, and will soon weave their yarn into domestic cloth. Two other schools have devoted some little time to sewing, &c.

No special pains have been taken to secure the regular attendance of children, yet there is not so much falling off towards the close of the term as usual. Doubtless, it is on account of the deep interest prevailing through the nation on the subject of education. They have better lessons, are better behaved, and are much easier governed; consequently, we observe some of the finer feelings of civilized society among them. Finally, I have full confidence in legislative patronage, and an apportionment of national funds for the public instruction of youth, whenever the national judicatory shall place the power necessary for the success of such national philanthropy in a calm and sensible board of commissioners. Without such a board, I think the Choctaws will fail in the plan of 1842; with such a board, they are as likely to succeed as any other nation with the same advantages.

I am, with much respect, &c., your obedient servant,

JARED OLMSTEAD.

Major WILLIAM ARMSTRONG,
Acting Superintendent Western Territory.

No. 54.

Extract from annual report of Daniel Gavin and S. Denton, teachers of school at Red Wing's village.

RED WING'S VILLAGE, *August* 8, 1843.

Last year we informed you that the Indians were frequently absent on hunting tours, and that most of the children were very irregular in their attendance at school. Last spring they were not so often absent; sometimes it afforded us much encouragement by seeing so many little children, and several young men, all desirous to be instructed. Several commenced to learn English; some began to read and write tolerably well, but just when they began to improve, Wacoota, the chief, with the Wabashaw and several other Indians, went to St. Peter's to know if they could get the money which is appropriated for schools; and now, as they expect to receive it, they want no school; they wait for answer from Washington. If they are disappointed, they are determined to send again their children to school. We hope then to have again a good school, but for the moment we must wait. S. DENTON.

No. 55.

Winnebago School, Turkey River,
Iowa Territory, August, 1843.

Sir: In compliance with your instructions, the following report is respectfully submitted:

My connexion with the Winnebago school commenced October 1, 1842, since which time 128 Indian children have been taught at the school. The least number in attendance during any one month is 51, the greatest 108. From November 1 to April 1, the school averaged only 55. From April 1 to the present date, the average number is 85.

During the winter months, many of the children were absent with their parents on their hunt.

The pupils are divided into five classes, according to their advancement in knowledge:

First class. 3 pupils—1 boy, 2 girls; have a good knowledge of "Mitchell's School Geography," "Smith's Practical and Mental Arithmetic," through interest; write a legible hand, have weekly exercises in composition, read and spell correctly.

Second class. 15 pupils—11 boys, 4 girls; 10 of them have a good knowledge of the ground rules of arithmetic, and the geography of the Western continent. They read, write, and spell, daily, and have frequent exercises in composition.

Third class. 4 pupils—2 boys, 2 girls; study "Parley's Geography," with the use of the globes; "Emerson's Arithmetic," reading, writing, and spelling. One of the girls has exercises daily in constructing sentences.

Fourth class. 33 pupils—18 boys, 15 girls; read, write, and spell, and are beginning to join numbers.

Fifth class. 29 pupils—17 boys, 12 girls; in the alphabet and *a-b ab's.*

The elements of vocal music have been taught, as a regular exercise, to the advanced classes. All girls attending the school spend the intervals of study in sewing. The following list will show the number of articles made in that department of the school since the report of August last: dresses for girls, 64; short gowns and shirts, 224; frock coats for boys, 24; short coats for boys, 10; shirts, 200; pants, 100; girls' aprons, 25; sacks, 10; total, 657.

Sewing is at present the only branch of domestic science generally taught in the school. Five promising girls, who live in the families with the institution, are efficiently taught in what pertains to the kitchen. Five girls, who eat at the common table, are occasionally called upon to assist in the cook room, but the benefit they derive therefrom is small. To derive any benefit from that source, an efficient matron is needed in the department, to whose care classes of girls can be alternately consigned, and taught to perform all the duties which the establishment involves. Connected with the farm as it is, its duties, if developed and controlled by a skilful manager, would be sufficiently extensive to afford the learners an insight into all the necessary branches of domestic economy. If a suitable family could be found to take charge of the establisnment, very little additional expense need be incurred. Some alteration and addition would be required in the boarding house, but only such as could be done by the hands employed on the farm, without the necessity of hiring even a mechanic to superintend the work.

* * * * * * *

In addition to sewing, I think that knitting and spinning should be taught to the girls. Several dozen pairs of socks and stockings are consumed by the school annually, which they, at little expense, might have the benefit of manufacturing. A few pounds of carded wool, and a spinning wheel or two, would be all that is needed to accomplish this.

But to accomplish what I suppose our Government, by establishing this school, designed should be accomplished, means are wanted that can be had only by appropriating to its use more of the funds allowed for education than has yet been done.

We need a press and printer. We have scarce a book in use but needs revising, to adapt it to the wants of the school. Our country abounds in books and publications suited to every grade of its own schools, but has none calculated for minds just emerging from barbarism; nor can a press in the civilized land meet the demands of mind in this situation. It must be situated where the phases of such mind are being exhibited, and conducted by men before whose observation they are passing. Minds under circumstances so widely different from an enlightened people are not interested in the matter which our books and publications furnish. They have in many respects a literature of their own, which must be cultivated before they will receive ours. Hence the necessity of revising the books we have, and of publishing some new ones. There are now two hundred natives in this tribe who can read simple lessons in the English language, and would readily read simple lessons in their own.

A small sheet, printed in the English and Indian, should now be put in circulation, in order to retain the influence of those who have left school. No people on earth thirst more eagerly after news relating to themselves than do the Indians. A sheet, executed in suitable style, giving the past and present history of the Indians, and sent to the parents of those children who can read, would enable those children to retain what they have learned, and (I should hope) exert a salutary influence in favor of civilization. Without these means, our labor on the children who have left school is apparently lost. The harvest we have reared must rot. The experiment thus far is successful; but, unless we can have means to meet the demands of success, our efforts will fail.

That the above report and suggestions may meet your approbation is the ardent hope of your ever obedient servant,

JOHN L. SEYMOUR.

Rev. D. Lowry,
United States Sub-Agent.

No. 56.

Sir: In presenting my annual report of the Winnebagoes, I am relieved of much labor by statements from the principal of the school and farmer, herewith submitted. I beg leave, also, to transmit the following extract from a communication made in July last to the editor of the "Christian Advocate and Journal," by the Rev. Julius Field, of the Methodist Episcopal church:

"On Monday, June 19th, in company with Rev. N. Wager, I visited the Government establishment among the Winnebagoes. The Rev. Mr. Lowry, a Cumberland Presbyterian, is the agent. There is a large farm opened, of about four hundred and fifty acres, one hundred and seventy-five of which are cultivated by the Indians. There is a school in which four or five teachers are employed at the expense of Government, or as a part of the annuity coming to the Indians for their lands. Some of the children I found would vie with white children in their attainments. They are in all stages of improvement, from the alphabet to a qualification to enter an academy.

"But the best of all, a genuine spirit of piety seemed to pervade the whole. There are, perhaps, connected with the school, the farming and mechanical department of the establishment, from fifteen to twenty whites, members of four or five different branches of Christ's church; but all seemed perfect harmony. While here, they have a bond of association by which they watch over each other, calling themselves the "church in the wilderness;" but this cannot interfere with the individual church membership of each. This establishment, I am satisfied, is well calculated to do this degraded nation of savages good."

I knew nothing of Mr. Field's intention to notice the Winnebago school in this public way till this communication appeared in the "Christian Advocate." It is transferred to my report, because it comes from a disinterested source, and from a gentleman whose station points him out as being worthy of confidence.

The institution, it will be perceived, still maintains an honorable comparison with our common English schools, and the children are giving ample evidence of a perfect equality with the whites in point of intellect and ability to learn. This is the more pleasing, as their nation have heretofore, by common consent, been placed in the lowest grade of humanity, and supposed to be utterly incapable of ever becoming an educated people. To utter such a sentiment now, in view of the intellectual developments made at the Winnebago school, would betray more mental imbecility than is possessed by the most untutored savage of the woods.

The circumstances of the Winnebagoes have been and still are particularly unfavorable to improvement. The large annuity received of Government draws hordes of lawless white men to the line of their country for purposes of trade; so that our frontier, in point of example, is literally a modern "Land of Nod." Rapes and murders have recently been committed on both sides; and three young men, Indians, are now in jail, under sentence to be hung. Murders committed by the Indians, among themselves, when drunk, are unparalleled. I have known three to be killed during one revel, and buried in the same hole.

The unsettled state of this people, too, is equally unpropitious to a change of habit. To expect mere vagrant occupants of the soil to arrive at that state of social order and happiness seen in civilized life is unknown to the pages of history as well as common observation.

Yet, notwithstanding these and many other discouragements that might be named, it is pleasing to know that the Winnebagoes are manifesting an unusual disposition to cultivate the soil, and have more children in school than any one tribe of Indians in the United States at their stage of improvement. Indeed, in this particular, they are in advance of many tribes who rank far above them in the scale of civilization.

But to guard the morals of these children amid the unhallowed associations which they now sustain, both with their own people as well as the whites, is a difficult task; and the most untiring efforts to do so on the part of the teachers often fail. To draw them into school, and impart the rudiments of an education, is an easy matter, compared with training their minds to virtuous habits; and yet, unless the latter can be accomplished, better never attempt the former.

Merely to enlighten the intellect of a child, whether red or white, without giving strength to conscience, by imparting religious principles, only tends to lengthen the lever by which vice subverts the moral constitution, and destroys the fabric of human society.

The question whether civilization or religion should act as pioneer in a barbarous land is often agitated. They should always go out together, and act conjointly, each taking the pre-eminence as circumstances indicate. Extremes have been taken on both sides of this important subject. On the one hand, precedence has been given to letters and science, as the only means of preparing the way for religion; on the other, these have been kept at home, and religion sent into the field to contend alone with old and deep-rooted habits. The result of both schemes is before the world.

What amount of apparently fruitless effort should be expended before giving up a people as incorrigible is another unsettled question. The Secretary of War would have closed the Winnebago school the second year after its commencement, had not the treaty been imperative respecting its continuance. Patience and perseverance, however, on the part of the teachers, have overcome many obstacles of which he then complained; and although the experiment is far from having reached the point originally contemplated, still past success has been sufficient to encourage hope for the future. In cherishing this hope, we not only have before us developments of the Winnebagoes, but the progress of other tribes in civilization, once sunk to the lowest point of degradation. The vague opinion that nothing can be done for the aboriginies of our country, with the additional sentiment that nothing has been heretofore accomplished for them by way of improvement, are alike unfounded in fact.

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D. LOWRY,
U. S. Indian Sub-Agent.

No. 57.

LAPOINTE, *July* 14, 1843.

DEAR SIR: I embrace the present opportunity of presenting you with this my report of the missions and schools under my superintendence in the (Chippewa) Ojibwa country, on Lake Superior, as connected with the Rock River conference of the Methodist Episcopal church.

1st. At *Sandy Lake*, about one hundred miles in the interior from the head of Lake Superior. We have had a white missionary and an educated native Ojibwa missionary at this station during the past year. The missionaries have alternately taught the school. The number of scholars belonging to this school is *fifty*, though they have been irregular in their attendance, owing to two causes: one is, they are taken away with their parents to their winter hunts, and again to sugar making in the spring, so as to keep a great portion of the children away for a long time; another is, a number of families have been away in search of whiskey, which, it is said, some persons have brought on to the borders to sell to the Indians.

We are happy to learn, however, that the proper remedies are to be applied to cure the last-mentioned evil, which will be of great benefit to the mission and school.

The children who attend the school make rapid proficiency in the primary branches of education. There are a number of native converts to the Christian religion in this band, who are ornaments to their profession, and who assume civilized habits as soon thereafter as they can acquire the means. Upon the whole, in the midst of discouragements, we are not disheartened, but determined to prosecute the work we have in hand, and hope in the name of the Lord for better success in the cultivation of this hitherto much-neglected people.

2d. We have a school connected with our mission at *Fond du Lac*, at the head of Lake Superior, on the Fond du Lac river, which is the great thoroughfare in the Indian country from Lake Superior. This band is very friendly to our school, and wish its continuance among them. We have at this station one missionary and a converted native Ojibwa, to assist him in the school and act as interpreter for the school and mission. The interpreter is well qualified for the place he occupies in the establishment. The number of scholars attached to the school is *fifty-two*, though the same difficulties which have prevailed at Sandy Lake have existed here, (whiskey excepted,) and have produced similar results in the attendance, though not to so great an extent. The children who have attended have made such good progress as to greatly encourage their teachers. We are now more particularly encouraged with a prospect of a better state of things at the above stations. When the late treaty made at Lapointe shall go into effect, we anticipate a good result to our schools and missions, from the operations of the carpenters, farmers, and blacksmiths, in the nation; and the Indians will be better provided with clothing, for themselves, their wives and children. These things we believe, with the excellent influence which the Indian agent now exerts upon the nation, and who, we believe, has the best interest of the Indians at heart, will be a check upon their migrating habits, as well as their thirst for bloodshed and war, and place them in a posture favorable to sending their children to our schools, and of listening themselves to the words of the Great Spirit.

I believe this to be the universal desire of the Ojibwa nation in this country; from almost every band in the nation the cry is coming up, "Send us the word of the Great Spirit, and teach our children to read and become wise like the white people." I hope this cry will be responded to fully, and that every band in this nation may be furnished with the means of instruction.

I would here correct an error which pervades the minds of many who feel a deep interest in the welfare of this people; which is, that this country is too far north and too cold to admit of cultivation. The facts are otherwise. The country is well adapted to corn, wheat, potatoes, peas, and all garden vegetables raised in New England. The land is well watered and well timbered. Wild grass is found in abundance, and the Indians desire to learn the art of agriculture, and wish to become more permanently settled.

I sincerely hope that the train of events now taking place will accomplish great good to this long-neglected people. We have the pleasure of being associated with the missionaries of the American board from time to time in this country, and I believe we mutually and cordially hail each other as colaborers in the great cause in which we mutually profess to be engaged.

I am, dear sir, very respectfully, yours, &c.

JAMES R. GOODRICH,
Sup't Missions and Schools.

ALFRED BRUNSON, Esq.,
Indian Agent, Lapointe, Lake Superior.

No. 58.

DUCK CREEK, W. T., *March* 22, 1843.

SIR: Having returned to my station, after an absence of several months on business of the tribe, I embrace the earliest opportunity to report to you the condition of the school under my charge. It was commenced about five years since, among the first Christian party of Oneida Indians, under the patronage of the Protestant Episcopal church. The usual number of scholars is, and has been, during the above period, from 25 to 30. Some of the children have made good proficiency, and are so far advanced in the common branches of an education as to be fitted for usefulness. One of the female scholars from an influential family has been taken into my own family and instructed in all necessary domestic branches. During the winter a second school has been commenced, in which about 16 or 20 children are instructed by one of the natives. This school is also under my supervision.

The Oneida tribe are advancing in the arts of civilized life, and we humbly trust that, by the blessing of God, our labors have contributed to help them onward.

I have the honor to be your friend and obedient servant,

SOLOMON DAVIS,
Sup't of Prot. Ep. Mission among the Oneida Indians.

Hon. GEORGE W. LAWE,
United States Sub-Agent, &c.

No. 59.

PETITE CHUTE, *September* 23, 1843.

DEAR SIR: I had the honor of receiving your communication of the 20th instant, and the circular of the War Department enclosed therein.

Herewith is a statement of the number of scholars under my charge, together with the different branches in which they are instructed.

This mission and school has been established for ten years, wholly for the benefit of the Menomonie youth. I have labored during that period unremittingly for their moral and physical culture, and have procured for their use, during the sickly seasons, medicines at a heavy expense. And during the prevalence of the smallpox among them, in the year 1837, I visited the Indians in their own country, and vaccinated them by hundreds. I have, within the last year, erected, at an expense of over seven hundred dollars, a school house, an interpreter's house, and a carpenter and smith's shop; and I am annually at a heavy expense in employing an interpreter, and all this without any equivalent recompense, but that of knowing that I am discharging my duty to my fellow-creatures and to my Creator. I have generally had under my charge from forty to sixty-five scholars. I have now, as the statement will show, forty-six. They learn in the simple branches of orthography and reading with about the same readiness as white children generally do. Every attention is paid to the religious and moral as well as mental improvement of the Indians; and I trust, through the blessing of God, to be able to bring many of them to embrace the Christian religion, and the arts, habits, and virtues of civilization; if persevering industry will do it, it shall be done.

I am, with much respect, your obedient servant,

T. T. VANDENBROCK,
Superintendent of Mission.

George W. Lawe, Esq.,
United States Indian Sub-Agent.

No. 60.

Green Bay, Wisconsin, *March* 18, 1843.

Dear Sir: Allow me to present to you a report of the school in the Oneida nation of Indians near Green Bay, Wisconsin Territory.

1. The school is kept in the Orchard party, and numbers, average attendance, about twenty scholars.
2. The branches taught in the school are reading, spelling, writing, and arithmetic.
3. The scholars have made as rapid progress as children in our common schools usually do among white people.

I am, sir, with sincere respect,

JAMES R. GOODRICH, *Superintendent.*

George W. Lawe, Esq.,
Indian Agent of the Green Bay Sub-Agency.

No. 61.

Statement of the condition of the Brothertown school, in Manchester, Calumet county, Wisconsin Territory, on the 29th day of January, A. D. 1843.

The said school commenced on the aforesaid 29th day of January with forty-five scholars in attendance, since which time the number has increased to eighty; and even this number does not embrace all the children in said town. It is very probable that the number will still increase to ninety or upwards. About half the number now in attendance are over twelve years of age.

The studies pursued are arithmetic, grammar, geography, reading, writing, and spelling.

I certify that the above is the true state and condition of the aforesaid school, now in operation, this 15th day of February, A. D. 1843.

C. S. HAYWARD, *Teacher.*

MANCHESTER, *February* 15, 1843.

No. 62.

TONAWANDA MISSION, *September* 30, 1843.

SIR: Agreeably to the request of Mr. Osborne, sub-agent of the New York Indians, I forward you a report of the Indian boarding school at this place, under my supervision, which I have made in accordance with a form forwarded to me by Mr. Osborne.

General remarks.—Public worship has been regularly sustained on Lord's day the year past, in a meeting house built several years past on this reservation, through the assistance of the Baptist convention of the State of New York. The cause of temperance has progressed to a considerable extent among the natives in this place, nearly one-half of this tribe having given their signatures to the temperance pledge, and about two-thirds of their chiefs make no use of ardent spirits. The Indian school at this place is in a flourishing state, about forty children being in attendance, all of whom are fed and clothed on the mission premises. The children are instructed in the several branches usually taught in the common schools in this State—such as reading, writing, arithmetic, grammar, geography, &c. The boys labor on the farm, and are instructed in the different branches of agriculture, to qualify them to be farmers. The girls are taught the several branches of housewifery—such as cooking, washing, sewing, spinning, &c. The mission premises are the property of the Baptist State convention of New York, consisting of 124 acres of land, about 90 acres being under good cultivation and very productive. This tribe is divided into two classes—Christian and Pagan. The Indians on this reservation are very unwilling to leave the graves of their fathers, although the general impression is that they will have to leave. They are unsettled in their minds, as it regards their future place of location, when removed from this. A part of them have talked of going to Canada, but I think they will abandon that idea.

In conclusion, I would say, taking into consideration that at other stations, where there are schools in operation among the Indians, the children are neither fed nor clothed, only by their parents at home, of course very little comparatively is expended to sustain the schools; while at Tonawanda we have children from Buffalo and Tuscarora, and this because of the advantages connected with the school here. They are fed and clothed at the expense of the station, and are continually under the influence of the mission family—are not allowed to talk their own language but one day in a week. Of course their progress in literature and civilization is altogether more rapid than where they board at home. This is clearly seen by their parents. Therefore, it is sincerely hoped Government will add $200 to the $400 annually received.

Very respectfully, your obedient servant,

AUGUSTUS WARREN,
Superintendent.

T. Hartley Crawford, Esq.

No. 63.

Mohegan School, *September* 28, 1843.

Dear Sir: In pursuance to your request in your circular of July 25th, I hereby beg leave to report:

Our school, numbering the past year 10 girls and 9 boys, belonging to the Mohegan tribe, has been taught nine months in the following studies: reading, spelling, writing, arithmetic, geography, history, philosophy, and composition.

I am somewhat at a loss how to reply to the letter of your circular, as we have had but one school, aside from a Sabbath school, which we have sustained among them. I was placed here in 1832 as the principal teacher, under the patronage of the General Government, on the appropriation of the $400 per annum, and I still continue in the same employment. That I may be more extensively useful among them in various ways, I employ an assistant, (a good female teacher,) for whose services I pay the sum of about $50 per year, and board her. Aside from this, I have furnished books and stationery for the school, and other little items, to the amount of about $10. The balance I spend for the support of my own family, as far as it goes—for my own services, which are as follows: I preach to them on the Sabbath; for this alone, however, I receive a small compensation from a missionary society. During the week I visit them from house to house, comfort them in their troubles, and alleviate them in their sickness, as far as our scanty means will allow. I instruct and encourage them in agricultural pursuits, besides keeping a few joiners' tools, and assist them in mending their farming utensils and in improving their dwellings, &c.

We have a total abstinence society among us, and quite a good proportion of the natives of all ages, of both sexes, are warm advocates of the cause. Some of our young men cultivate the soil—others follow the whaling business. One of our intelligent young men is now second mate of a brig which sails from New York to the South.

Their condition is evidently improving from year to year, but still there is much to be done. As their teacher and spiritual guide, I would add, in conclusion, in their behalf, that, should your quarterly appropriation cease, their condition would become deplorable. Hoping, therefore, their good will prompt its continuance, I remain, sir, your humble servant,

ANSON GLEASON,
Teacher Mohegan School.

T. Hartley Crawford, Esq.,
Office Indian Affairs, War Department.

P. S. If the above report is acceptable, will you remit to me $100 for my services the last quarter, ending September 30th, for the instruction of the Mohegan youth? A. G., *T. M. S.*

No. 64.

Report showing the condition of the (Indian) Choctaw academy, in Kentucky, for the quarter commencing on the 1st day of July and ending on the 30th of September, 1843.

There are now at this academy forty-eight Indian youths; of these there are fifteen Pottawatomies, five Creeks, one Prairie du Chien, twenty-three Chickasaws, and four Chicagoes. Of the Chickasaws, three will be immediately sent home, and their names in consequence have been dropped from the tabular statement which accompanies this, and which exhibits the names, both English and Indian, of the students; the tribes to which they belong; their ages; the time of entering the academy; and a note of the progress of each.

The health of the students has been remarkably good during the past quarter, which is generally the most sickly season of the year. The few cases of indisposition which occurred yielded readily to the skill and prescriptions of the attending physicians; and I am happy in saying there is not one at this time on the sick list.

The progress of the students in school has been steadily on the advance, and there are some instances of very rapid improvement; but, for a more detailed account, I refer you to a tabular statement showing the studies of each student, and the order of his advancement.

The following is a description in part of the books used in this academy, viz: Webster's Elementary Spelling Book; Emerson's 1st, 2d, 3d, and 4th Class Readers; Goodrich's 1st and 2d Class Readers; Murray's Introduction, &c.; Torry's Moral Instructer; the Bible and New Testament; Walker's and Webster's Dictionaries; Kirkham's and Benedict's Grammars; Olney's and Mitchell's Geographies and Atlases; Pike's and Smith's Arithmetics; Colburn's Algebra; Gibson's Surveying; Ostrander's Planetarium, &c.

The clothing of the students is of the most substantial kind, and is in general made of the same material for all the students. The only exceptions are in the coats, pants, vests, shirts, and hats, of the grown-up young men and the monitors, which are made of finer material.

The dining room and cooking department are under the immediate charge of a person every way competent to the discharge of this important duty, and at a salary of $350 per annum and boarded. There can be no exception taken to the quality, quantity, or preparation of the diet of the students. It consists of every description of meats and vegetables, such as bacon, fresh beef, pork, mutton, pigs and poultry, beets, beans, peas, potatoes, cabbages, &c., wheat and corn bread, coffee at breakfast, and coffee and milk at supper, soups twice or thrice a week at dinner, and at other times cooked fruits and pies.

The buildings have undergone thorough repairs for the fall and winter; new bedding has been provided for all the sleeping rooms. At no previous period have the students been more comfortably provided for. An ample quantity of firewood will be provided; part has already been furnished at the rooms.

It may be some satisfaction to the department to be informed that many of the students have formed themselves into a temperance society. The present number of members is forty-three; of these, three are white men, having families, four young white men of this vicinity, and thirty-six Indian youths of the academy. The society holds its sessions one day in every week, and each member is bound to take his turn in delivering an address before the society at its stated meetings. I am satisfied that much good has already been derived from this association, both from the moral principles inculcated, and the incentive it holds out to the student to qualify himself as a public speaker.

On Sabbath mornings a lecture on morals or religion is addressed to the assembled students. Divine service is performed occasionally by some visiting preacher of the gospel, but this happens most frequently on week days, being obliged by their arrangements to attend to their regular congregations on Sundays.

Mr. Gardner, the principal teacher, and Messrs. Thomason and Barrow, have been attentive to their respective duties ; indeed, all connected with the establishment have exerted themselves to promote the design of Government in engrafting knowledge and civilization upon the rising generations of the " red man of the forest."

I am truly gratified in being able to give so favorable an account of the school.

All of which is respectfully submitted.

D. VANDERSLICE,
Superintendent Choctaw Academy, Ky.

T. Hartley Crawford,
Commissioner of Indian Affairs.

No. 65.

Report of the inspector of the Choctaw academy, in Kentucky, at the annual examination and inspection on the 27th, 28th, 29th, and 30th of September, 1843, and which closes the 3d quarter of the present year.

The undersigned begs leave to report, that he has patiently and with scrutiny examined the students, and inspected and inquired into all matters appertaining to the Choctaw academy. It is with pleasure I can state that the school is in a very prosperous condition, and that good order prevails in every department. All connected with it seem to have labored to produce the good anticipated by the establishment of this school.

The students are decently and comfortably clad; their table is supplied with plenty, and with as much variety as the country affords ; their rooms are made comfortable, and they all appear cheerful and happy. No complaints have been made against the establishment, or any one connected with it.

A temperance society, made up principally of the students, hold weekly meetings at the academy.

The report of the superintendent, and his tabular statements, will give you a fair and impartial account of all the facts. They were carefully compared, and found correct.

It has been suggested that the name of the academy should be changed from Choctaw to that of Indian academy, because the school is made up of different nations.

All of which is most respectfully submitted.

WILLIAM SUGGETT.

Hon. James M. Porter, *Secretary of War.*

No. 66.

Baptist Mission Rooms,
Boston, September 13, 1843.

Sir: The sum of forty-four hundred dollars, received from the United States Government by the Baptist board of foreign missions, for the year ending July 1, 1843, has been appropriated and expended as follows:

Of the appropriation of $1,000 for an Ojibwa school on St. Mary's river, as by treaty of 1826, the whole has been expended in part support of the Ojibwa school at Sault Ste. Marie under the superintendence of Rev. A. Bingham.

Of the appropriation of $1,400 for the Ottowas and Ojibwas, for "education and missions," as by treaty of 1836, under the arrangement of August, 1837, one-half has been expended on the Ottowas and Ojibwas, each as follows:

Ojibwas—	For support of St. Mary's school above named - -	$300
	For support of Rev. J. D. Cameron, missionary -	400
Ottowas—	For support of Ottowa school in charge of Rev. L. Slater	350
	For support of Rev. J. Meeker, Ottowa missionary and teacher, Indian territory - - - -	350
		1,400

Of the appropriation of $2,000 from the "civilization fund," as per act of Congress, 1819—

There have been paid towards support of Indian school at Tonawanda, New York, under the superintendence of Rev. A. Warren	$400
Towards support of a Shawnee school at Shawanoe, under the superintendence of Rev. F. Barker - - - -	600
Towards support of a Delaware school, Indian territory, in charge of Rev. J. D. Blanchard - - - - - - -	600
The balance of $400 has been appropriated to a school for the Pottawatomies, but is not yet expended, the late school teacher having resigned - - - - - - - - -	400
	2,000

The superintendents have been notified of the requisitions of the War Department, as communicated to Hon. H. Lincoln, in your favor of August 12; but as the notification will not be received by some before making their annual reports to the Indian agents, the above supplementary statement is respectfully submitted.

Very respectfully, your obedient servant,

SOLOMON PECK, *For. Secretary.*

Hon. T. Hartley Crawford,
War Department.

No. 67.

Statement showing the amount and disposition of funds provided by treaty for education purposes.

Tribes.	Date of treaty.	Amount.	How expended.
Chippewas - - - - - -	Aug. 5, 1836	$1,000	Baptist board.
Chippewas, Ottowas, and Pottawatomies -	Sept. 26, 1833	3,825	Choctaw academy.
Chippewas, Menomonies, Winnebagoes, and New York Indians - - -	Aug. 11, 1837	1,500	Protestant Episcopal.
Choctaws - - - - - -	Sept. 27, 1830	2,500	Schools in the nation.
Do - - - - - -	Sept. 27, 1830	12,000	Do do.
Do - - - - - -	Jan. 20, 1825	6,000	Do do.
Chickasaws - - - - -	May 24, 1834	3,000	Choctaw academy.
Creeks - - - - - -	May 24, 1832	3,000	Do do.
Do - - - - - -	Feb. 14, 1833	1,000	Schools in the nation.
Cherokees - - - - - -	May 6, 1828	2,000	Do do.
Delawares - - - - - -	Sept. 24, 1829	2,304	No school.
Florida Indians - - - - -	Sept. 18, 1823	1,000	Do.
Kickapoos - - - - - -	Oct. 24, 1832	500	Schools in the nation.
Miamies - - - - - -	Oct. 23, 1826	2,000	No schools.
Ottowas and Chippewas - - -	Mar. 28, 1836	8,000	Schools in the nation.
Otoes and Missourias - - -	Sept. 21, 1833	500	Do do.
Osages - - - - - -	June 25, 1823	3,456	No school.
Pottawatomies - - - - -	Oct. 16, 1826	2,000	Choctaw academy.
Do - - - - - -	Sept. 28, 1828	1,000	Do do.
Do - - - - - -	Oct. 27, 1832	2,000	Do do.
Pawnees - - - - - -	Oct. 9, 1833	1,000	Schools in the nation.
Quapaws - - - - - -	May 13, 1833	1,000	No school.
Sacs and Foxes of Missouri - -	Oct. 21, 1837	770	School in the nation.
Winnebagoes - - - - -	Sept. 15, 1832	3,000	Schools in the nation.
Do - - - - - -	Nov. 1, 1837	2,800	Do do.

No. 68.

Statement of the civilization fund.

Balance on hand January 1, 1843 - -	$10,492 82	
Add appropriation for the year 1843 -	10,000 00	$20,492 82
Of which has been expended from 1st January to 30th September, 1843 - -	7,097 50	
Required to complete payments for the year -	3,600 00	10,697 50
Balance - - - - -	-	9,795 32

No. 69.

NEAR DOAKVILLE, *December* 12, 1842.

SIR: The council appropriated eighteen thousand dollars out of the interest on the Chickasaw funds for educational purposes after this year, and have agreed that the following schools be located in the several districts, viz: Fort Coffee academy, at Fort Coffee, with a branch for females; Noniwaiya academy, (exclusively for males,) near the council house; together with the schools on Arkansas. The Rev. Mr. Ames has agreed that his society shall take charge of Koonsha female seminary, to be established in Pushmataha district at such place as shall be selected by a committee; Chuwalu female seminary, Wheelock female seminary, and Eyamebluе female seminary, in Puckshenubbe district—of only one of which the location is fixed; the other two to be located by committees. Those schools, including the one in Pushmataha, have been offered to the American board of commissioners for foreign missions. The council wishes that the three district schools taught by Messrs. Wilson, Potts, and Rind, be blended with the school to be established near the council house; and that the said district schools be discontinued by the 1st of August next; and we do respectfully request that you will represent our wishes on this subject to the Department of War, that the course may be approved of. It is also the wish of the council, with the sanction of the President, that the forty youths be educated under the Dancing Rabbit treaty, that they be sent out of the nation to the following institutions in the United States, viz: ten to Jefferson college, at Cannonsburg, Pennsylvania; ten to Ohio university, at Athens; ten to Indiana Asbury university, at Greencastle, Indiana; and ten at any institution to be selected either by yourself or the department. Our plans for the education and improvement of our people have been well matured, and we know of none which would effect us more permanent and lasting good than that of sendiug the forty youths, to be educated under the treaty of 1830, out of our country, to the institutions above specified; and we trust you will state the wishes of the council on this subject to the Government.

You will see from the school act that yourself and one individual from each district have been appointed trustees to Spencer academy. I have requested the secretary of this district to send you a copy of our laws.

I am, very respectfully, your obedient servant,

P. P. PITCHLYNN.

Captain William Armstrong.

No. 70.

Choctaw Agency, *December* 27, 1842.

Sir: I have the honor to enclose you a communication addressed to me by Colonel P. P. Pitchlynn, speaker of the general council, which sets forth the wishes of the nation. I feel gratified that the Choctaws have taken so decided a stand in favor of educating their people. It is, I believe, the first instance of an Indian tribe changing the payment of their annuity from the tribe to education purposes. The subject has been freely discussed through the nation, and the plans adopted are such, under all the circumstances, calculated to do the best. There may be some inconsiderable changes necessary, but the general plan strikes me as so favorable, that I will cheerfully co-operate with the nation in carrying out their views, which I trust will receive the sanction of the department. I have not a copy of the resolutions, and therefore only refer to the general plan. There may be modifications necessary, which the department can adopt. The fund arising from the Chickasaw investment is, according to the treaty, under the control of the general council. The buildings now erecting at Spencer academy, and designed to be supported from the $6,000 appropriation heretofore used at the Choctaw academy in Kentucky; this sum will be insufficient to carry on the school on the scale at first designed. I understand one of the resolutions of the council is, that there shall not be any salary over four hundred dollars, and boarded at the institution; this sum will not command the services of such a man as should be principal of Spencer academy; I would therefore recommend that Mr. Wilson, who teaches near the agency, be appointed principal or president of Spencer academy; he is well qualified, and the choice, I know, of the Choctaw nation. Mr. Wilson will not undertake for less than his present salary, and can readily obtain that in Arkansas. I have been anxiously expecting an answer to my letters in relation to the school now called Spencer academy. It is important that a farmer should be there at this time, preparing the grounds for a crop, as the buildings will be ready the first of May. The council have appointed, as you will see from Colonel Pitchlynn's letter, one Choctaw from each of the three districts, with myself, as trustees. Before proceeding beyond preparing the buildings, I would be glad to have your sanction and views. Be pleased to address me as early as possible on this subject. If the transferring of Mr. Wilson meets your approbation, and if we had a good steady farmer, the other subordinates can be elected for the salary mentioned by the council, and, as early as possible, we will commence operations; after which, workshops and other necessary buildings can be erected, in part by the school, or at least under the immediate inspection of the superintendent.

Furniture to commence will have to be provided. The superintendent, as I conceive, should have a general superintendence, to regulate the hours of study and labor, and to open the school with prayers, and to preach. I would remark, that, owing to arrangements and the religious views of the nation, the superintendent should be a Presbyterian preacher. The section of the country around the academy is mostly of that denomination, and the expectation and arrangement is, that the academy shall partake of that denomination.

The council, you will observe, wish the forty boys that have been educated in Kentucky, under the treaty of Dancing Rabbit creek, to be divided between different colleges; this is a plan well calculated to do much good, and I hope will meet your approbation. The object will be, to give to such a more finished education than they would receive at home. So soon as I receive from the clerks of the council the resolutions in relation to schools, they will be forwarded.

The Rev. Mr. Ames, I understand, will visit Washington; he has been some time in the Indian country, and I would respectfully refer you to him for general information upon the subject of schools. I hope to hear from you soon, giving your views, &c., in relation to the schools, with such general rules as you may be pleased to adopt, which will enable us to progress with Spencer academy, so as to have a crop made this season. It is for this object that I address you in advance of the resolutions of the council.

The Rev. Cephas Washburn, for many years at the head of the Dwight mission in the Cherokee nation, is well qualified to be superintendent of the academy; he resides in Arkansas, having left the Cherokee nation in consequence of the difficulties. I do not know that his services could be had; certainly there is no man better qualified; I mention him, as he is in the country, and, if he could be had, would be near at hand. The season of the year is fast approaching which makes it necessary to begin farming, which must be my excuse for bringing this subject so pressingly before you.

Very respectfully, your most obedient servant,
WILLIAM ARMSTRONG,
Acting Superintendent W. T.

T. Hartley Crawford, Esq.,
Commissioner Indian Affairs, Washington City.

No. 71.

War Department,
Office Indian Affairs, September 13, 1843.

Sir: Upon reflection, since my letter to you of the 1st instant was written, I am of opinion that the balance of the fund arising from the sale of 54 sections of land, amounting to $3,405 46, which I understand can be usefully employed in this the early stage of the Choctaw system of schools, had better not be retained here. Under existing circumstances, this balance ought not, I think, to be used without the consent of the Choctaw council. It cannot be expended in strict accordance with treaty provisions; and, although the power is in the Executive to direct how it shall be laid out, I prefer, considering all things, to consult the wishes of the Choctaws.

My own anxious desire is, that their money should be appropriated to the education of Choctaw girls at one or more of their female seminaries. You will please to use all proper means to persuade the council to this application of it, in which I will not permit myself to doubt your success. In anticipation of this, I will cause a requisition to be issued in your favor for the said sum, so that no time may be lost in its judicious and beneficial expenditure for the object and purpose named.

Very respectfully, yours,
T. HARTLEY CRAWFORD.

Major William Armstrong,
Acting Superintendent, &c., now in Washington City.

No. 72.

War Department,
Office Indian Affairs, May 8, 1843.

Sir: In acknowledging the receipt of your letter of 27th December last, I have to remark that the delay has been occasioned partly by a desire to give the whole subject of education among the Choctaws a thorough examination, and partly but chiefly the expectation of receiving the official proceedings of the council in relation to it. As further delay might be injurious to the interests of the Indians, I am constrained to take your communication and those of Major Pitchlynn, which it encloses, as the basis of the present action of the department.

Your communication and that of Major Pitchlynn were presented to the late Secretary of War in January last, and received from him much thought and investigation, and I cannot do better than to give you the result at which he arrived in his own words. He says:

" I not only approve, but am highly gratified with the movements of the Choctaws towards the education of their children, and will render any aid and support in the power of this department to promote the undertaking.

" The plan of having the agent of the United States for the Choctaws, by virtue of his office, a trustee, together with one from each district, to constitute a board of education for the principal academy, is very proper. If their powers were extended so as to make them a board of education for the nation, it would be found very useful. A general system would then be adopted, and economy and efficiency would be promoted. I should think the speaker of the council should also be an *ex officio* trustee.

" A general superintendent under the trustees is a good idea. He should have the general charge of all the academies and schools, be empowered to visit and inspect them, license the teachers, and report the condition of the schools to the board. From the description given of him by Major Armstrong, I should think Mr. Washburn would be a very proper man.

" For the reasons given by Major Armstrong, the proposed allowance for the principal of the academy is not adequate. I would recommend that the authority to employ teachers and to fix their compensation should be given to the board of education; the council might fix a limit to the whole amount to be thus expended.

" The amount should not, however, exceed that fixed by law, or the treaty, as now acted on.

" As to sending young men to colleges, I am willing to accede to it in a modified form. The expense must be greater than at the academy in Kentucky. If we take twenty at first, and see what the expense amounts to, it would do as a beginning. The residue of the fund can be advantageously employed otherwise.

" Not having the proceedings of the Choctaw council before me, I cannot formally approve them; but I approve the outlines and substance of the plan, as communicated by Colonel Pitchlynn, and authorize and desire the Indian agent among the Choctaws to aid in its execution by all the means in his power. He will engage a farmer to prepare the ground, if authorized by council."

These views meet the approbation of the present Secretary, and he desires that they be carried out; and the doing so will involve the necessity of much communication between you and the Choctaws who are invested with the power to act for the nation; all which you will be pleased to report to this office, together with such suggestions as may occur to you from time to time.

The appointment of Mr. Washburn being confirmed, your recommendation of Mr. Wilson is also approved, and he will receive the appointment. If you have not already appointed a farmer, to be located at the Spencer academy, you are now at liberty to select any one you may deem qualified, and he will be confirmed by the department.

That order and regularity may be preserved, it will be necessary that a full set of regulations be adopted, for the government of the principal schools as well as the preparatory ones. This will be the duty of the trustees, who will take the subject into immediate consideration; and so soon as the regulations are prepared, they should be submitted to the department, for its approval, or such suggestions for their improvement as may be deemed essential.

The Secretary of War has fixed upon two seminartes for the education of the twenty Choctaw boys—ten at the Asbury university, in Indiana, and ten at Lafayette college, at Easton, Pennsylvania. Both these are in high repute, and no doubt exists of every advantage being derived by the boys that they could obtain at any institution in the United States. Instructions will be forwarded to you for the procuring and sending on the boys, which should be done as early as they can be collected and got ready.

The number of twenty youths, to be educated out of the nation, having been fixed on for the present by the late Secretary, in which the present Secretary concurs, ten of them will be sent to a college selected by the department, according to the wish of the Choctaws, expressed in Colonel Pitchlynn's letter. Lafayette college, at Easton, Pennsylvania, has been chosen, because this town is the residence of the present Secretary of War. He will occasionally visit it, and will have the opportunity of seeing personally that they are properly instructed, &c. Easton is, moreover, in the midst of a German population, who are among the best farmers in the United States; and by daily witnessing their mode of cultivating the earth, and the advantages consequent upon lives of industry and morality, the young Choctaws will, it is hoped, be greatly benefited. The two other colleges, after a time, when the number to be thus educated shall be enlarged, may receive the additions. Your letter of 8th of April last was received here on the 6th instant. What has been done, so far, is approved. The appointment of a farmer was indispensable, and that could not be done here; but you must take especial care not to exceed the funds that you know, and have been heretofore informed, would be applicable to this great object.

You will please report the amount of the purchases for agricultural and horticultural purposes, and the aggregate of the outlay, independent of the erection of the buildings for the academy, and inform the Choctaw chiefs of my great gratification at the prospect of extending the knowledge of letters, and dispensing the invaluable advantages of education among their people, female as well as male. The former, as I have before said to them, I regard as of at least equal importance with the latter, and to both will contribute whatever aid may be legally within my control.

Very respectfully, &c.

T. HARTLEY CRAWFORD.

Major William Armstrong,
Choctaw Agency, west of Arkansas.

No. 73.

War Department,
Office Indian Affairs, September 29, 1843.

Sir: A Seminole Indian, named John Douglass Bemo, about nineteen or twenty years of age, was carried to sea from St. Augustine some nine years ago, and about twelve months since, by means that I cannot explain, found his way into the family of the Rev. Mr. Douglass, pastor of the mariners' church, Philadelphia, in which he has since lived, and received all the advantages of instruction and education that in his previously untutored condition he would improve. By this good man and family, and the religious and benevolent people who are their associates, this *red youth* was treated with the utmost kindness and liberality.

Mr. Douglass wrote to me a short time ago, informing me of John's being at his house, of his condition and attainments, and anxiety to return to his tribe in the West. I replied favorably, and Mr. Douglass arrived here with the young man some ten or twelve days ago.

John represents himself to be a nephew of Oceola. He can read and write, and speaks well in public; is a person of irreproachable morals and conduct, and good strong constitution. Having acquired some knowledge, from modes of life and associations there, he may be very useful among and to his wild and untamed brother Seminoles. The most effective way of benefiting them through him will be by making him a teacher of the children. Although his own knowledge is very limited yet, as he understands our language, and knows a little of his native tongue, and will be an instructor of pure Seminoles, whose minds are now a blank, he may be regarded as peculiarly qualified to direct and aid them up to a certain point, while the fact of his being one of their brethren will probably remove their repugnance to attending school.

Besides the reasons stated for giving his exertions the direction mentioned, I am further induced thereto by the urgent application of the Seminoles, through their sub-agent, for a school among them.

You will therefore please to carry John with you to his tribe in the West, and, as soon after his arrival as practicable, give him employment as a teacher among his own people.

To effect this, a plain log school house must be built, on the most economical plan. This done, and the necessary explanations having been made to the Indians to procure the pupils, he will enter upon his duties. After the children have learned all he can impart to them, another teacher may be employed, if necessary, and we have funds, to whom John can be an assistant, by whose aid he may be still further qualified, and be able to extend his usefulness. I do not think any further instructions are at present necessary.

You will receive $100, for which a requisition was issued on the 28th instant, and for which you will account under the head of contingencies of the Indian department, to enable you to defray the expenses of his journey from Philadelphia to the Indian territory west; and when you inform me what the expenses of the log cabin school house will be, a remittance will be made of the amount. John will be allowed for his services as teacher, to commence when he enters upon the duty of instruction, at the rate of $300 per annum.

Very, &c.

T. HARTLEY CRAWFORD.

Major W. Armstrong,
Acting Superintendent, &c.

No. 74.

SUPERINTENDENCY OF INDIAN AFFAIRS,
Burlington, Iowa Territory, September 27, 1843.

SIR: Having now received the annual reports of the agents employed in the service of the Indian department within this Territory, I beg leave to submit a general view of the situation of the Indians, and the affairs of this superintendency, for the information of the department.

Since my last annual report, the title of the Sacs and Foxes to all the land they claimed west of the Mississippi has been extinguished, by a treaty with them, concluded on the 11th day of October last; under the provisions of which, they have already removed west of a temporary boundary, (fixed by the treaty,) where they are to remain for a period of three years from the first of last October. The removal of the tribe has been effected with very little trouble, and without expense to the Government; and their general conduct has been, as heretofore, perfectly friendly and harmless towards the white population near them. It is to be regretted, however, that their excessive fondness for ardent spirits, or the means of procuring it, have been in no degree abated by their change of residence; the unprincipled of the white population, who make a business of supplying them with whiskey, still continue to follow them. But it is useless to dwell upon this painful subject; their intemperate habits must end in their extermination, without means can be devised for depriving them of the power of indulging them.

This confederation of Sacs and Foxes are entitled to rank among the most bold, honest, and independent of the tribes north of the Missouri, and are second to none of them in apparent respect for the Government, and peaceful disposition towards their white neighbors, and yet it is found to be impracticable to induce them to devote any portion of their very large annuities to the amelioration of their condition. To the establishment of schools among them they manifest an obstinate resistance; and, in the negotiation of the late treaty with them, they resisted every effort to induce them to make provision for the establishment of the *pattern farm*, which, under a former treaty, had been very successfully conducted for them, near their principal villages; and equally unsuccessful was the exertion of the commissioner to induce them to permit a portion of the proceeds of their land to be expended in the erection of comfortable houses for them, and the enclosure of small lots of land for cultivation. It is believed that the Sacs and Foxes have within the last year abstained from any warlike demonstrations towards their hereditary enemies, the Sioux.

The Winnebagoes, of whom the Rev. Mr. Lowry, the sub-agent of the Government, says, "they have by common consent been placed in the lowest grade of humanity," have, within the last year, manifested a more abandoned and vicious disposition in their intercourse with their white neighbors than at any former period. Several white persons have fallen victims to the encouragement held out by them to the Indians to mix with and purchase whiskey from them; and their innocent children have suffered in the indiscriminate butcheries of the drunken and enraged savages, three of whom have been convicted of murder, and are now under sentence of death. Other outrages have been committed by individuals of the tribe, of a most revolting character, and such as, it is believed, have not heretofore been practised or attempted by the American Indians. The example is said to have been set them, in the violation of some of their women, by white men, at *Prairie du Chien;* but I have not been able to obtain any sufficient or satisfactory information of the truth of this charge.

One of the tribe was killed last winter by a white man, who has not yet been brought to trial for the offence; and another was killed by entering a cabin in the absence of the owner, who had so placed a loaded gun that it was dicharged by forcing the door open. But whatever may have been the influence of these acts, it is very certain that they were preceded by personal outrages and robberies committed by the Indians upon the white people found within what they claimed as their country. This tribe has, ever since its removal to the west of the Mississippi, manifested great restlessness, and a disposition to evade or disregard their treaty obligations as to their place of residence, principally with a view to keep near the Mississippi, where they find greater facilities for indulging in their drunken habits. This disposition it has become necessary to restrain; and I have heretofore reported to the department the course about to be pursued for that purpose. Every effort to prevail upon them to give up their residence upon the "neutral ground" has failed, notwithstanding that it has obviously, even to them, become so surrounded by white population, that, with their habits, they can no longer reside there without constant collision and deadly feuds. Much as the habit prevails among many tribes of resorting to the use of deadly weapons in their drunken revels, there is, perhaps, no other in which so many lives have been sacrificed to it as among the Winnebagoes. Profligate, worthless, and vindictive, as these people are, the school established by the Government at this sub-agency certainly presents a most gratifying contrast to the disgusting character of the tribe, and a portion of them have given more attention to agriculture than could have been expected or even hoped for from their general character. For the details connected with the school and their farms, I beg leave to refer you to the report of the Rev. Mr. Lowry, their sub-agent, to whose indomitable zeal and perseverance in the cause of education and civilization of the Indian race, the success of the school and the cultivation of the farms are exclusively attributable. Whether it will be practicable, with the co-operation of the military force stationed at Prairie du Chien and Fort Atkinson, to keep these Indians from so disturbing and harassing the white population near their border, as to render the infliction of severe chastisement necessary, is, I think, very questionable.

The Sioux of Mississippi, with whom alone of the numerous bands of the Dahcotas we have treaty relations, have, during the last year, conducted themselves with more than ordinary propriety towards their white neighbors, and fewer outrages among themselves in their drunken revels have been reported than usual. A number of the bands have recently concluded a treaty of peace with the Chippewas, with whom they have long been engaged in an exterminating war; and as their treaty was conducted under the advice of Colonel Bruce, the Sioux agent, and they have referred the execution of it, in part, to the Government of the United States, it is to be hoped that the effect of it will be beneficial to both parties. This tribe has been represented as having made war last summer upon some of the Missouri tribes; but, as I have received no report or information on the subject from the Indian agent at St. Peter's, I infer that the reported hostile attack was made by some of the bands who wander in the plains between the sources of the Red river of the North and the Missouri, and who but seldom visit any of our agencies or trading houses, and are not recognised by our treaties with the bands near the Mississippi.

All the tribes in this superintendency suffered severely from the great duration and intense cold of last winter; a large proportion of their horses perished, and, from their usual improvidence and wastefulness, some of them were reduced to great suffering for want of food. A portion of the Sioux must have perished, but for the prompt interposition of the War Department in supplying them with guns and ammunition, to enable them to sustain themselves by hunting.

The annuities paid by the Government to the Sacs and Foxes, to the Winnebagoes, and to the Sioux, if prudently expended, and used with any tolerable degree of economy, or even if not wantonly wasted, would afford to each of these tribes abundant means of subsistence at all seasons; but, instead of appropriating the money portion of their income to the purchase of necessaries, it passes, with very few exceptions, immediately from them to the traders and whiskey sellers, and to others for the purchase of horses; and a large proportion of the provisions and goods furnished them, under treaty stipulations, are exchanged for whiskey as soon as they get possession of them, and always at such rates as the cupidity of the whiskey sellers choose to dictate. It may therefore be well questioned whether the annuities paid by the Government to the Indians are not, with regard to most of the tribes, a positive injury to them; most of them have in a great measure abandoned the chase, and live in the most slothful inactivity, never sober when they can obtain the means of intoxicating themselves; averse, from habit and savage pride, to labor. Subject at all times to the overruling and controlling influence of their traders, they will make no provision in advance for their wants, and the prospect of starvation seems to have no terrors for them until the last mouthful of food is exhausted. I can see no prospect of a change in their habits, or the most remote hope of bringing them to a more economical use of their ample means of subsistence, until a radical change is effected in our system of trade and intercourse with them; their very vices subject them to the influence of their more intelligent white brethren; and, so far as my information extends, it will be found that in every tribe there is one or more individuals, in the character of licensed traders, who can induce them to do, or not to do, any thing the officers of the Government may wish or require of them. These men, like most others, look to their own interest, which is best consulted by the rapid and improvident expenditure of the annuities of Indians in the purchase of goods; and even the waste of their provisions subserves the interest of the traders, who are generally prepared to supply the deficiencies occasioned by their wastefulness. But it is useless to urge this subject upon the consideration of the department; until Congress can be induced thoroughly to probe the system, and be made to comprehend the injuries it has inflicted on the Indians, and the waste of funds it has caused the nation, no permanent change for the better can be effected. Transfer to the agents of the Government the influence now and long exercised over the Indians by the traders, and nothing but the employment of incompetent agents can arrest an immediate and beneficial change in the destinies of the Indian race.

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I am, sir, very respectfully, your obedient servant,

JOHN CHAMBERS.

T. HARTLEY CRAWFORD, Esq.,
Commissioner of Indian Affairs.

No. 75.

St. Peter's Agency, Iowa Territory,
September 1, 1843.

Sir: The farmers appointed under the 5th clause, 2d article, of the treaty of the 29th September, 1837, with the Medawakanton Sioux, have the present year been employed in fencing and ploughing the Indian farms. From their report, and my own observation, I have the satisfaction of reporting that the prospect of an abundant crop is very flattering. At the most of the villages a part of the Lake Calhoun band have had their corn destroyed by the high waters this summer. A part of the Little Crow's band have also, through their own neglect, suffered their corn to be injured for the want of work, while they have indulged their propensities for whiskey drinking to an almost unlimited extent. Their proximity to and facility of procuring this curse to the human family renders their case almost hopeless.

The blacksmiths and their assistants have been, the present year, very usefully and constantly employed, in the repair of arms, traps, kettles, &c., and making such articles as the wants of the Indians require, and making and repairing such farming implements as have been required for the use of the Indian farms. The two lower bands have suffered much with sickness this summer, although not many deaths have occurred. The influenza has prevailed generally among the Sioux, and the location of the villages near Lake Pepin, and on the Mississippi river below the lake, renders them extremely subject to chills and fevers.

The Sioux interested in the treaty of 29th September, 1837, have increased gradually every year since they have been receiving annuities from the Government. The first year they were paid the number was, as I find in the books of this office, sixteen hundred and sixty-eight. The next year, 1840, the number had increased to seventeen hundred and ninety; in 1841, the number was seventeen hundred and seventy-six; in the year 1842, the number was eighteen hundred and sixty-three; and the present year they have increased to nineteen hundred and thirty-eight, which I think is owing partly to the return of some of these bands from other villages, where they had lived for some years previous to the receipt of annuities.

I find it extremely difficult to arrive at the exact number in the various villages who participate in the annuities received from Government, and have not been able to arrive at the number of souls within the agency, owing to their extreme aversion to let the number of their bands be known, as most of the chiefs, not participants in the annuity, pretend that they see no good that can result from giving a census of their respective bands; they have uniformly refused to do so. The list of villages I furnished your excellency last year is as near an approximation to their number as can be obtained.

I am sorry to find, this summer, a spirit of jealousy has grown up among the Sioux against the missionary establishment, particularly when they have attempted to keep schools, and in some instances have refused to let their children attend. This spirit, I doubt not, has had its origin not with the red men, but from those who wish to derive some benefit from their opposition to the establishment of schools amongst them. They have been told that, if they objected to schools, the money intended for education and other useful purposes would be paid to them in specie. This disposition first manifested itself in the lower villages, or those nearest Prairie du Chien, where I have been informed it had its origin, and has extended as far up as *Lac qui Parle*, but in a modified degree. The Indians, no doubt, as soon as they are convinced that the funds appropriated for schools, &c., will not be paid them directly in specie, will be as willing, if not more so than formerly, to have their children educated; in fact, some of them have so expressed themselves already, and some who never yet had a school at their village have said that if the money is not paid, then they will ask for a school to be placed at or near their village, so that their children may receive a share of the benefit.

Your excellency may rest assured that the Sioux, generally, within this agency are much more friendly disposed toward the Government and the citizens than when I first arrived at this post. The first and only instance of the Sioux punishing one of their people for the murder of a white man took place this summer, in the face of Thunder's band, as I have had the honor to report heretofore.

The treaty of peace happily concluded between a part of the Sioux and Chippewas, and which I transmitted, through your excellency, to the department, I am happy to state is in a fair way to be acceded to by most, if not all, the various bands within reach of each other. Both parties, as far as heard from, are sending me word that they are glad to hear of the treaty, and manifest a willingness on their part to become parties to its stipulations. I had been invited to meet a number of Chippewas and Sioux, who were not present at the treaty, this fall, at the mouth of the Chippewa river, to receive their sanction to the treaty, and make it, as they say, *stronger*. I shall certainly avail myself of this opportunity of cementing the friendship so propitiously commenced, as it will add much to the comfort and welfare of both parties.

The labors of the missionary are rendered useless by the interference of those whose interests clash with the advancement of the Indian in civil and religious acquirements, particularly by a set of men who keep and sell to those ignorant people whiskey, in exchange for blankets, kettles, guns, traps, or any other article that can be turned by them into profit, to the great injury of the redskin. The regular licensed taverns within this agency, I am happy to state, so far from violating the law regulating the intercourse with the Indians, have used their influence to prevent the introduction of ardent spirits into the Indian country. Within the last three years, I have had frequent consultations with the chiefs of the Sioux interested in the treaty of the 29th September, 1837, and they generally remark, that it would be much to their interest to have goods furnished by their great father instead of the specie annuity, but that the young men of their villages prefer the money. I have no doubt that, should the department think proper to substitute goods, the Indians, or a large majority of them, would be satisfied with the exchange. Were it not for the influence exerted by those indirectly interested in the specie payments to the Indians, they would long before this have made the request to have goods. The last winter was one of unusual severity, even in this high latitude. From the 1st of November to the 1st of April the ground was covered with snow, and generally, throughout the winter, from two and a half to three feet deep. The Indians were, in consequence, unable to hunt, and many would, no doubt, have starved, but for the timely aid of the Government, through the agent and officers of the fort, together with what the traders furnished the Indians in provisions. In fact, some of the traders kept scarcely enough to feed their own people until supplies could be obtained from below, this spring. The commissary had to send to Galena to procure flour for the garrison, so bare had the necessity of the Indians left the fort of breadstuff. The prospect of the coming winter is much more favorable. The last has been a lesson to them that I hope will be remembered; and, in most instances, the Indians have shown a disposition to guard against the want of food this year, by planting and cultivating more corn than formerly. The Yanctons and Sissatons, who reside on the prairies and follow the chase, particularly the buffalo, fared well throughout the winter and spring; the buffaloes being more abundant and much nearer to them than in former years.

The school report from the *Lac qui Parle* mission school has not yet been received. The severity of the winter and scarcity of food drove most of the Indians from there to the neighborhood of this place, where they were furnished with sufficient to keep them from starvation.

The report of the mission school at the Red Wing's village, conducted by the Rev. Mr. Denton, of the Swiss missionary society of Lausanne, Switzerland, is herewith transmitted.

I have the honor to remain your excellency's obedient servant,

AMOS J. BRUCE,
United States Indian Agent.

His Excellency JOHN CHAMBERS,
Superintendent Indian Affairs, Burlington, Iowa.

No. 76.

SAC AND FOX AGENCY, *September* 4, 1843.

SIR: In connexion with this my annual report of the state of this agency, and of the Indians within its limits, I have the honor to transmit the accompanying account, estimate, statement, &c., as required by the regulation of the Indian department. I intended to have included among them a census of the Indians, classed by sexes and ages, as was required last year, but have been thus far prevented from preparing it, from inability to collect them for enumeration at the time expected.

The conclusion of the late treaty in October of last year, requiring as it did an entire removal of the Indians from their then locations, as well as an abandonment of all the trading houses then occupied, and of the agency buildings, and other improvements designed for the accommodation of the Indians, provided me, as I hoped, with this means of improving their condition, by bringing the different bands into a closer proximity of residence than before, as also by removing them to as great a distance from the new frontier as could be effected, having, at the same time, an eye to the convenience of the Government. I aimed to effect this by a judicious selection of some site whereon to locate the agent and all the trading and other establishments, with which the Indians must have such frequent intercourse, whereby they would readily perceive that their personal convenience would be best consulted by establishing their new residence as closely as suitable points would permit. In this object I have partially succeeded, though not thus far to the extent I had hoped—near half the Sacs and one band of the Foxes having built their villages within sight of the agency, while the rest of the Sacs are within eight miles of it. But the great majority of the Foxes, comprising the bands who heretofore resided upon the Iowa and Skunk rivers, entertaining some jealousy of the other portion of the nation, as well as an aversion to the *Des Moines* country, have fixed themselves about fifteen miles distant, upon Skunk river—a position which would be of but little moment, were it not for their troublesome nearness to the new line.

Unless, by their final position upon the waters of the Missouri river, some insuperable barrier is interposed to their communication with the white population, or until, by suitable legislation, some means are adopted of rendering spirituous liquors totally inaccessible to them, no great success should be expected in attempting the civilization or improvement of these tribes; but, on the contrary, that they will ere long equal in vice and profligacy the most degraded of their neighbors. Their abandonment of a portion of their country lately ceded was but the prelude to an immediate pursuit of them by those depraved and debased characters, whose sole employment is in ministering to their vicious appetites. The Indian frontier appears to have become the natural rendezvous of this class of people, who willingly suffer every inconvenience, and complain of no discomfort, so long as they have the means of successfully continuing their infamous traffic in whiskey. Shops are, I believe, more numerous along the new line than they were upon the old; and several persons who had temporarily settled in the neighborhood of it, waiting its survey, now that it has been run, moved immediately upon it. Two barrels of whiskey were found, and seized, concealed within a mile of the new agency, by Mr. Smart, the interpreter, a short time since placed there, to be in readiness for the annuity payment. He kept it, subject to my order, and I directed that it should be destroyed.

The unusual length and severity of the last winter subjected the Sacs and Foxes to much distress, and great loss of horses—the ground having been covered to that depth with snow that they could procure no subsistence for them. This, with the losses and inconveniences incident to moving, reduced them, during the early part of the summer, to a situation of great necessity, especially as the lateness of the season delayed them in moving beyond expectation, and consequently obliged them to defer the commencement of their agricultural operations until spring had far advanced. I was, however, enabled to supply to some extent their most urgent wants, by purchasing provisions for them from the fund set apart for such objects by a stipulation of the late treaty; and hence the prudence and obvious advantages of this stipulation are felt by them.

The iron and steel and smiths' tools, &c., have been removed from the old shop, in pursuance of the late treaty; and the contractor is now busily at work, with a large force, in erecting the new shops—one set of them being up, floored, and roofed, and the other partly raised. They are to be completed (one set for each tribe) by the 1st of October; and the supply of iron, &c., for this year being now on the way up, they will go into operation, without loss of time, after that date. These buildings are situated about three-eighths of a mile distant from the left bank of the *Des Moines*, and a mile and a fourth below the mouth of the Racoon river. The Foxes would have preferred the location of their shops near their towns, upon Skunk river; but this would have removed them from under the immediate supervision of the agent, where they should be, if practicable; as, likewise, have tended to frustrate one part of my main design, of collecting them as much as possible into one neighborhood, more remote from this influence of the frontier settlers. The agency house will be erected a few yards from the shops; and the smiths and interpreter are building their residences so that none of them will exceed 250 yards from the same point. The place selected is also, in regard to beauty of appearance, quality of soil, and general position of ground, far superior to any other in the vicinity—a consideration of some importance in the final sale of the property.

I refer you to the accompanying report of Mr. Wilson, for all information relative to the pattern farm, now under his care, and which, by the late treaty, is to be cultivated during this year for the Indians. Our expectations regarding the crop that would be raised, quite flattering at first, were subsequently disappointed by causes beyond human control; yet I hope for much benefit to the Indians from the produce that will be secured. Owing to the limited amount of the fund now remaining, I am making every possible curtailment of the expenditures, and have discharged all but two of the hands employed.

The Sacs and Foxes, in accordance with their accustomed promptitude, abandoned the eastern portion of the country ceded within a few days after the period specified, and would have done so even before the time had the season and state of travelling permitted. The most valuable portion of their late country is that which they have already given up. It is fertile, mostly abounding in timber, and adapted to the growth of all Northern produce. The extent over which its reputation had spread, and its ability to maintain its character, may be best judged from the surprising rapidity of its settlement. The part of the tract still remaining for two years to the Indians is of much less value, and, in large portions, entirely worthless—it being only upon the margins of the streams that a sufficiency of timber can be found to meet the wants of the few who are settled immediately upon the banks, while the highlands, besides being destitute of wood, possess a soil in many places of apparent sterility, the face of the country being very broken, and often intersected by lakes and marshes throughout tracts of much extent, while the entire want of shelter from the rigorous severity of winter would alone prevent its settlement.

The distance of the new agency from this place will not exceed ninety miles, over a very good road, following the ridges which divide the *Des Moines* and Skunk rivers, crossing the new line about twenty-eight miles below the agency. I designate it the "Racoon River agency," to avoid confusion with this, which yet is, and probably will continue to be, known as the Sac and Fox agency.

For the present, I will, as usual, be addressed at Fairfield, Jefferson county.

With much respect, I have the honor to be your obedient servant,

JOHN BEACH.
United States Indian Agent.

His Excellency John Chambers,
Governor of Iowa, Superintendent Indian Affairs, Burlington.

No. 77.

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The late refusal of the Winnebagoes to exchange their present country for one promising a more permament settlement was unexpected, and is much to be regretted; though it is doubtful whether, if a treaty had been effected, they could have succeeded in obtaining a country from the Sioux, as I have recently learned, from a source in which full reliance may be placed, that no portion of country belonging to the latter Indians can be purchased, under the restrictions imposed by the late resolution of the Senate of the United States.

The embarrassment attending the permanent location of the Winnebagoes is the more to be regretted, as the season is now too far advanced to attempt any thing further on the subject this fall, and, if postponed till next summer, the ensuing Congress would in all probability adjourn before a treaty could go before the Senate, so that the Indians will most likely have to remain unsettled at least two years longer. To avoid such delay, I would respectfully urge that, if a permanent home can be provided for them, a treaty be ordered next spring, in time for it to go before Congress previous to adjournment.

That portion of the tribe still living on the Mississippi river in violation of their treaty of 1837 have been apprized of the late order of the department, requiring them to remove twenty miles from that river, and informed that obedience to said order will be immediately enforced by the troops of Fort Atkinson, should they decline a voluntary compliance.

It is deemed proper here to remark, that, while no ground is perceived at present to apprehend general hostility on the part of this nation, still it is feared that individual aggression between them and the border settlements will be continued, which may ultimately lead to such feeling. Their circumscribed limits, scarcity of game, strong temptations presented by whiskey sellers to draw them across the line, &c., all combine to make it difficult to prevent their strolling among the whites; and, when there drunk, defenceless families will be in danger. It is unnecessary, however, to enlarge on this subject, as the department is already fully apprized of the mutual outrages that have been committed, and will no doubt adopt all the precautionary means to prevent their repetition which may be in its power.

D. LOWRY,
U. S. Indian Sub-Agent.

No. 78.

WINNEBAGO SUB-AGENCY, *September* 1, 1843.

SIR: In my last annual report I informed you that the mill, in consequence of the failure of the dam, was not in condition to do business; it has since been repaired, and is now in successful operation.

The farm has been managed upon the same plan, and about the same quantity of land cultivated, as last season. From five to ten men have been employed. After completing our haying and harvest last season, and repairing the mill dam, the hands were occupied, until the commencement of winter, gathering the crops of corn, turnips, potatoes, &c. During the winter, they were employed in taking care of the stock belonging to the farm, procuring fire wood for use of the school and farm, threshing grain, and hauling provisions to Indians—a portion of the school band—who had located themselves on the Red Cedar river, some fifty miles west of the agency, for a winter's hunt. This latter service, on account of the great depth of snow and the severity of the weather, was extremely difficult and laborious.

At the usual season, we put in fifty-six acres of wheat, sixty acres of oats, sixty of corn, twenty of turnips, and twelve of potatoes and other vegetables. There was a large growth of wheat, but, just previous to its ripening, it was attacked with the smut, a disease peculiar to this grain, which will diminish its quantity and injure its quality. Oats were better than an average crop. Corn, turnips, and potatoes, suffered much from a long-continued drought; though the two former, if the remainder of the season should be favorable, will turn out middling crops, but the latter must prove nearly a failure.

We also prepared, for early planting in corn, some two hundred and fifty acres for different bands of Indians. This amount includes fifty acres, twenty-five of which was new breaking, situated on the upper Iowa river, twenty miles from the agency. The latter is occupied by a part of Coce-noo-shu-kah's band—Indians who have heretofore lived remote from the agency, leading a wild and wandering life, and subsisting (except their annuity) chiefly by hunting and fishing. As the experiment has proved successful, it may reasonably be expected that others will be induced to follow their example.

In the cultivation of their fields the past season, the Indians in the vicinity of the agency have exhibited an unusual degree of skill and industry. Their crops look well, and indicate an abundant harvest.

In the annexed table are exhibited the amount of stock, and the number of the different kinds of tools and implements of husbandry belonging to the farm; also, an estimate of the produce of the farm the present season, and the quantity of hay hauled and ricked at the agency for feeding the ensuing winter.

Stock.

7 horses.
16 oxen.
4 cows.

One ox and one cow have been slaughtered for the use of school during the year.

Tools, &c.

4 two-horse wagons.
1 two-ox wagon.
1 cart.
10 ploughs.
10 scythes and snaths.
6 axes.
4 harrows.
8 ox yokes.
3 sets double harness.
2 one-horse carts.
1 set cart harness.
2 Franklin stoves.
1 cook stove.
2 seven-plate stoves.
7 ten-plate stoves.

Estimate of grain, &c.

Estimated quantity of wheat, from 800 to 1,000 bushels.
Do oats, from 1,000 to 1,200 bushels.
Do corn, from 1,200 to 1,500 bushels.
Do turnips, from 5,000 to 6,000 bushels.
Do potatoes, from 200 to 300 bushels.

From seventy to eighty tons of hay have been hauled and ricked near the agency.

Yours, respectfully,
JOHN THOMAS,
Miller and Superintendent of Farm.

Rev. D. Lowry,
United States Indian Sub-Agent.

No. 79.

Sac and Fox Pattern Farm,
September 1, *A. D.* 1843.

Sir: I entered upon the duties of farmer on the 1st of November last. I found there had been safely harvested fifteen hundred bushels of fall wheat; forty acres of corn in the field; fifteen hundred bushels of potatoes, dug, and partially covered with straw and earth; twenty-five acres sowed in wheat, which was up and appeared well, but was subsequently destroyed by the thaws in the winter; two hundred and fifty bushels of oats, also harvested; a large root house commenced; two large corn cribs half finished; and the timber prepared for a house, twenty by twenty-two feet, for the accommodation of Indians visiting the farm during the winter. These buildings I had finished during the fall, as the weather would permit; the Indian house we could not point during the winter, but it answered the purpose designed, perhaps, as well in its unfinished state, as they prefer building their fires in the middle of the floor. They have been in the habit of visiting the farm in large numbers, and there could not be found sufficient room for them in the house we live in; it was built after the manner of their lodges, with a hole in the roof.

The produce of the farm, beyond that which was necessary for its use, we gave out to the Indians principally during the winter, making as equal a distribution as we could. By this means, during a winter of such unusual length and severity, a large amount of suffering was prevented, and the most pressing wants of those who visited us supplied, and a great deal carried to families at a distance who were unable to come in.

But for the malicious burning of the Indian mill, on Soap creek, I would have had two hundred barrels of flour for them during the winter; it was so near, and there would have been no toll to pay. As it was, I had to send forty, fifty, and sometimes as far as sixty miles to mill, and then have to exchange a bushel of wheat for thirty pounds of flour. I succeeded, however, in giving them fifty barrels during the winter. In the spring, I made, with your approbation, a contract with a man to take the wheat here, and deliver flour for it—giving eight bushels of wheat for a barrel of flour. I sent forty of this to the Indians on the head of Skunk and Racoon rivers; gave twenty to them here; and the remaining forty are here, ready to be sent to them. There will be some wheat left, after furnishing what this contract requires, but, perhaps, not much over the necessities of the farm.

The amount of produce furnished the Indians, including flour on hand ready for distribution, may be stated as follows, for the year ending with this date: 150 barrels of flour; 1,600 bushels of potatoes; 1,600 bushels of corn; 15 hogs weighing two hundred each; 4 steers slaughtered for beef. Besides fodder to their horses while visiting the farm, I have not included 300 bushels of oats fed to the farm horses.

The above supplies, furnished at traders' prices, will amouut to $2,000 for the flour, (in this I included $200 for flour, supposing it had been ground at their own mill,) $400 for potatoes, $1,600 for corn, $60 for the pork, and $60 for the beef—being $4,120 in all.

It has been frequently asserted that this farm does not furnish the Indians as much as the money expended would purchase. There has been something less than $2,000 per annum expended, and they have realized more than double the amount. And, besides this, there are now on the farm seven horses, forty head of cattle, thirty hogs, besides all the farming implements, which, if sold, will, with the proceeds of the sale of the farm, be something. These facts are worth a thousand unfounded assertions of inconsiderate and interested persons. The money thus expended has assuredly yielded its benefit to them in the most unexceptionable way. It must be remembered, too, that this was designed as a "pattern farm," to invite their attention to agriculture, and to furnish them the necessary instructions; as such, greater pains have been taken to farm well than is usual on other farms.

I make these remarks, that those whose duty it is to watch over the interests of the Indian may be encouraged to do that for him which will yield substantial good; and because traders of great influence have said the Indians should have no more farms, and assigning as a reason that the money would buy more for them than the farms will yield.

Very early in the spring, the principal chiefs came to me, and requested that the whole of the farm should be planted in corn. They stated that, as they would be so far off, they could not get any vegetables, and that they preferred corn to any thing else. I accordingly made an effort to comply with their wishes; but, in consequence of the excessive rains in the spring, I was under the necessity of leaving one field of fifty acres uncultivated. During the months of April and May, and half of June, the rains were almost without intermission, and the ground remaining so very wet, we met with great interruption and delay in breaking up ground. The season then suddenly changed to excessive drought; and during the months of July and August the ground has not been wet to the depth of more than one inch. From these causes, the crop of corn throughout this section of country will scarcely amount to one-third the usual crop.

We have one hundred and ten acres in corn, most of which looks very well; from this ground I expect to gather three or four thousand bushels. Had the early part of the season been favorable, we could easily have raised six thousand bushels. We have harvested ten acres of good oats, and put up ten tons of hay.

There are now on the farm: 40 head of cattle, including 10 work oxen; 7 horses, including one diseased and disabled; 30 hogs, 300 chickens, 2 wagons, 7 ploughs, 5 ox yokes, 2 sets double harness, 1 set of plough harness; 2 large harrows, 2 small harrows, 2 sleds, a small lot of carpenters' tools, besides axes, chains, hoes, &c.

Respectfully submitted.
GEORGE WILSON.

Capt. John Beach, *U. S. Indian Agent.*

No. 80.

Office of Superintendent of Indian Affairs,
St. Louis, September 29, 1843.

Sir: In conformity with the regulations of the Indian department, I have the honor to submit the following annual report:

There are few changes in the condition of things within this superintendency of sufficient importance to merit the attention of the Government; but so far as changes go, I am highly gratified to be able to state that they tend towards the gradual amelioration of the condition of the border tribes. From personal observation, I am enabled to say that the agents and sub-agents have devoted their time and talents to the discharge of their important duties with a degree of zeal and industry which promise highly satisfactory results. The Indians are becoming every day more and more impressed with the absolute necessity of turning their attention to agricultural and mechanical pursuits. The precarious supply of game upon which they have heretofore relied has almost entirely ceased; and it is to be regretted that many of the frontier tribes are now in the receipt of annuities, which (in their opinion) supersedes the necessity of manual labor. In all future treaties it would be well to guard, as far as practicable, against the increase of their annual supplies, as resources of this kind have a direct tendency to delay, if not to destroy, the views of the Government. The actual wants of an Indian are but few, and easily supplied; and if the head of a family considers the amount of money to which he is really entitled as sufficient for his subsistence, arguments or persuasions will go but a little way towards inducing him to take hold of the plough or mechanical implements. This will strike him with still greater force when he witnesses the annual decrease of his tribe, and knows that the death of each individual augments his own income. It would have been well if the Government had reflected upon this matter at an earlier period, and made the annuities correspond with the population. This would have caused an annual *decrease* of the expenses of the Indian department; and, in proportion as the artificial wants of the Indians *increase*, they would have been forced to turn their attention to those civilized pursuits so much desired by all enlightened statesmen and pure philanthropists.

Great efforts were made, during the late annuity payments, to induce the Indians to receive goods in place of money; but the unprecedented low prices, to which the competition among traders reduced all necessary articles, had an influence beyond any thing that could be said by the officers of Government. The tribes who received annuity goods also expressed much dissatisfaction at the omission of many articles which are of vital importance to them—such as ammunition, tobacco, knives, &c. The possession of large amounts of money, as I have already stated, is rather injurious than beneficial to the Indians. Amongst other bad effects, it attracts around them swarms of whiskey dealers and other vagabond characters, who are never found among the poorer tribes. Indeed, so various are the means resorted to, by these worthless characters, for the purpose of obtaining a portion of the Indian money, that some of them marry squaws, with the sole view of getting their distributive shares. It will be seen that such men add nothing to the stock of Indian morality. They are directly interested in keeping whisky (the Indian poison) at work amongst them, as any death adds to their own shares. The substitution of goods, in place of money, would certainly have a great tendency to keep off all such characters.

Notwithstanding the many obstacles which the Indians meet with in their progress towards civilization. I am happy to be able to say that their advance, though slow, has been steady for the last few years. From the most correct information that I have been able to collect, it appears that there has been a wonderful decrease in the quantity of spirituous liquors carried into the Indian country. This, I think, is mainly owing to the increased vigilance of the officers of the Indian department. In former years, most of the agents and sub-agents spent but a small portion of their time at their respective posts, which enabled whisky dealers to carry on their traffic with impunity. The happy effects arising from this increased degree of sobriety may be seen in the comfortable cabins, well-cultivated fields, and thrifty stocks, with which many of the border tribes are now possessed. The Otoes and Kanzas form the only exceptions; they are, to all appearances, as poor, wild, and savage, as they were twenty years ago. They begin, however, to be sensible of the superior independence and comfort of their neighbors, and often express a determination to follow their example. The decrease of game on their hunting grounds, together with the advice of their agents, and the example of their neighbors, it is to be hoped will produce a gradual change for the better.

The Indians are highly pleased at the early and prompt payment of their annuities, which enabled them to commence their fall hunts without the usual delay. They expressed a general wish that their funds might always be sent about the same period.

In a recent communication to the department, I had occasion to speak of the exposed condition of the Omahas, Pawnees, &c., on account of their proximity to the Sioux, and to recommend the establishment of military posts for their protection. I regretted to find that the General-in-chief did not concur in the propriety of the measnre; still I am inclined to believe that justice and humanity require it, and that our means for its accomplishment are ample. The situation of the Omahas is really deplorable. Their country is more destitute of game than any other portion of the Indian territory; their supplies from the Government have ceased by limitation; and such is their dread of the Sioux, that they are afraid to venture out, during the spring and summer, to cultivate their fields.

The same remarks will, to some extent, apply to the Pawnees. They had commenced, apparently with great zeal, in the cultivation of the soil; and we had reason to believe that, in the course of a few years, they would have been in advance of all their Indian neighbors. It happened, however, unfortunately, that the destructive attack by the Sioux, last summer, fell upon that portion of the nation who assembled round the Government farms for the purpose of becoming tillers of the soil. It is believed that a fear of similar misfortunes will retard all farming operations until such time as they can feel themselves secure against the Sioux.

The Prairie tribes, I have reason to believe, are likely to live in a more tranquil, prosperous manner for the future than they have been accustomed to for many years past. Nearly all their troubles and domestic afflictions grew out of the excessive use of spirituous liquors. The efforts of the agent during the last year, together with the aid of some of the traders and many of the more sensible and sober Indians, have done much towards destroying the whisky trade. During the ensuing season, I feel well assured that no liquor will be carried into that country from the United States. There were two steamboats and one keel boat that ascended the Missouri, freighted with goods intended for the Indian trade on the upper Missouri. These were so thoroughly overhauled and examined at the Council Bluffs as to prevent the possibility of smuggling. There are, however, other channels through which spirituous liquors may be introduced, and so far separated as to place it entirely out of the power of an agent to exercise a supervision over all. For several years past, large quantities have been brought in from Selkirk's colony, on Red river, and disposed of along the Missouri, in the neighborhood of the mouth of the Yellowstone. Again, in the south there is a company of Mexicans and Americans who bring in regular supplies, to be disposed of on the Arkansas and river Platte. This is brought from Santa Fe, and sold either to whites or Indians. A part of it is bought up by petty traders, and carried over to the Missouri, among the Sioux, Cheyennes, &c. Could not this be prevented by negotiations with the British and Mexican ministers?

Upon a review of Indian affairs within this superintendency, although much remains to be done, I think we have a just and reasonable cause to be satisfied that so much has been accomplished, and to hope that a steady adherence to the present policy will ultimately secure all the benefits that were anticipated in the beginning.

All of which is respectfully submitted.

I have the honor to be, very respectfully, your obedient servant,

D. D. MITCHELL,
Superintendent of Indian Affairs.

T. Hartley Crawford, Esq.,
Commissioner of Indian Affairs.

No. 81.

Osage Sub-Agency, *September* 1, 1843.

Sir: It again becomes my duty to submit the following annual statement of the affairs of this sub-agency:

It is out of my power (for want of field notes of the survey) to give you a correct map of the country, showing the sites of the several public buildings, &c. A brief description of the country has heretofore been reported to Captain W. Armstrong, acting superintendent, &c., and will be found at page 94, Commissioner's published reports on Indian Affairs, 1841–'42.

I have but little change to note in the condition of Osages within the past year, except that of intemperance. I am told, and I confidently believe it true, that the Osages have, within the last twelve or fifteen months, drank more whiskey than they had ever done since they were a people. Upon our southeast border, or rather east of the Senecas, (60 or 70 miles distant,) is a large steam distillery, able to make from five to seven barrels a day. This house furnishes, I have not a doubt, at least one hundred retailers to Indians. A majority of the houses immediately on and near the line, in Jasper and Bates counties, keep whisky to sell to Osages for their money, their ponies, their rifle guns, and their buffalo robes and blankets. I have made myself somewhat notorious in my attempts to suppress this most ruinous as well as infamous of all little traffics. I have been a little disappointed that the Osages have not attempted to stop a portion of this drunkenness themselves. In April, 1842, they consented and requested me to write out for their adoption a short penal code of laws; which was done, and published to the whole people in general assembly at that time, in which Osages were forbidden to bring whisky into the country, under the penalty of the destruction of the whisky and lashes on the offender. The chiefs of the different villages were constituted the judges of testimony in ordinary offences, and braves or soldiers were selected in captains' companies to execute these laws. After all this, not a first effort has been made to enforce or execute any portion of them. This, I think, is the fault of the chiefs, who, with very few exceptions, are to be found in the lead in these frolics. Many of the chiefs are, in other respects, bad men. Their late principal man, (Pah-ha-skah,) particularly, together with Baptiste Mongrain, who has been the interpreter for many years, and who is now a self-constituted chief, are in the constant habit of threatening to pull down the fences, and to drive from the nation the present interpreter, Charles Mongrain, and his brother, Louis Mongrain, who are farming very respectably, the former having fifty-five acres and the latter thirty-two acres in corn; they also have snug and comfortable buildings. Pah-ha-skah has for years been very unpopular amongst his people. They say that he has never taken any interest in the affairs of the nation, more than any other young warrior, except his interest was immediately concerned; that his only care has been to get as much of their annuities (money and goods) as his people would possibly bear.

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At my last report I had on hand two hundred head of cows and calves, and four hundred head of stock hogs, received in June, which were delivered immediately after their return from the summer's hunt, (in August.) If there is now one hoof of this stock left, I am not aware of it. A subordinate chief, Tah-wah-koh-he, drove seven head into the settlements this spring, before leaving on his summer's hunt. These cattle belonged to himself and to the people of his little town. They were sold for whisky and provision. The chiefs, generally, do all they can to discourage and prevent their people from farming and raising stock. The man Pah-ha-skah has frequently advised and encouraged his people to kill and eat the cattle and hogs, and even the work oxen of Charles and Louis Mongrain, two half-breeds, who are making some exertions to live by farming and raising stock. There are some fifteen or twenty families that have fenced and ploughed their little fields this spring, and about as many more that have ploughed without fencing.

We had an almost unprecedented freshet in the Neosho and its tributaries in May last, which made the crops here later, and in consequence of which the Osages left their homes to go on their summer's hunt about three weeks later than usual, and from whence they have not yet returned. The season, so far, has been very fine, and crops of corn, pumpkins, squashes, and melons, (which are all they attempt to raise,) look very promising. It is impossible to enumerate the number of acres cultivated, or the amount raised, their manner of cultivation being entirely rude, like other wild prairie Indians, the labor being done by the women with hoes; here and there small patches. They will scarcely raise a sufficiency this season for their support. This, however, they have not done for several years past. There has remained at home, that did not accompany the summer's hunters, every season for several years past, a party of White Hair's (Pah-ha-skah's) band, and every season this number increases. This circumstance would be favorable to their commencement at farming, &c., were it not lamentably true that this gang are the most lazy and worthless of the tribe, whose only object in thus remaining is to sell every little thing they may have, cross the line, for whisky, and to beg and steal for their support. It may be asked, why I do not call on the military, and put a stop to this. I answer, that the dragoons have been sent out on the prairie from Fort Scott this spring and summer. Besides, the whisky is brought in in small kegs, and the places where it is obtained are so numerous and scattered along the line that it would require all the dragoons in the service to patrol the country. It would be necessary to have an eye to our Cherokee and Pottawatomie neighbors; these furnish Osages occasionally with quantities of whisky. I do not hesitate to say, however, that a company or part of a company of dragoons, to pass frequently through our country and along our border, would have a very salutary effect.

I was directed, in July ultimo, by Captain Armstrong, to advertise, inviting proposals for building the grist and saw mills due under the treaty of 1839, the site and plan of which had been previously furnished. In this instruction the Captain has urged me to a close and careful examination of the site, &c., and directed me also not to exceed a certain sum appropriated for that object. Streams of the proper size, and that continue to run most, or even one-fourth of the season, are scarce in this country. A site was therefore selected on the Neosho, and, in accordance with the Captain's instructions, the houses for the millers have been built and received at that site. At as early a day as I shall be able to procure the advice and opinions of two experienced millwrights, already spoken to on the subject, you shall be advised of all my doings in this matter.

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I will here give you, as correctly as possible, the sites of the public buildings, &c. This agency is located on the river Neosho, about equidistant from the northern and southern boundaries, and near the eastern boundary of this reservation. Twelve or fifteen miles higher up said river, in a northwestern direction, are the blacksmiths' shops, and still five or six miles higher up said river is the trading house. About two-thirds of the Osage people live on this river, in towns or villages; the bands of White Hair and Little Osages—the other two bands, Clermont's and Paw-he-no-push-ce's, live on the Verdigris, near the southern boundary.

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These people, after all, would not be hard to manage, were it not for the interference and counsel of busy and unprincipled white men. The chiefs, it is true, are selfish and troublesome, but this could be resisted and overcome.

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The Osages numbered at the last payment of their annuity, which was in April, one thousand three hundred and eighty-eight men, one thousand sand three hundred and twenty-two women, and one thousand three hundred and ninety-two children; making in all four thousand one hundred and two souls.

I am, sir, with much respect, your very obedient servant,

R. A. CALLOWAY,
Osage Sub-Agent.

D. D. Mitchell, Esq.,
Sup't Indian Affairs, St. Louis, Missouri.

No. 82.

Council Bluffs Sub-Agency,
September 26, 1843.

Sir: The regulations of the department require of me at this time the preparation of a general report on the affairs of this sub-agency.

I have charge of the "united nation of Chippewa, Ottowa, and Pottawatomie Indians." They possess five millions of acres of land on the northeast side of the Missouri river, immediately north of the State of Missouri, and west of the lands recently ceded to the United States by the Sac and Fox Indians, in the Territory of Iowa. These lands are exceedingly fertile, but, owing to the scarcity of timber, of rock, and indeed minerals of every kind, they are not so valuable for the purposes of the white man as one would be led to suppose by looking at the map, which shows this region to be the only western outlet to market for the vast Territory of Iowa. Still their value is sufficient to justify the Government in paying a very handsome price for them; and it is manifest that they must be treated for at a very early day.

When the treaty of Chicago was concluded, by which those lands were set apart for the Indians who now own them, no one anticipated the great change which has since taken place in the condition of the Western country, otherwise a location further removed would have been selected. Although it is but ten years to-day since that treaty was concluded, yet in that short space of time (which would be but a day in the history of any other country than ours) the tide of emigration has rolled onwards to the far West, until the whites are now crowded closely on the southern line of these lands, and will soon swarm along the eastern side, to exhibit the very worst traits of the white man's character, and destroy, by fraud and illicit intercourse, the remnant of a powerful people, now exposed to their influence. This condition of things, and the fact that the Territory of Iowa will soon claim her right to become a State, indicate that a treaty cannot long be postponed; and I would respectfully recommend that commissioners be sent early next spring to enter into negotiations.

The great mass of the Indians are prepared to treat, if they can be offered in exchange a suitable country, of less extent, as part of the consideration. But it will be a matter of delicacy and difficulty to arrange the *details* of the treaty. They will not only demand a high price, but the commissioners will have the additional difficulty of a great variety of claims against them from licensed traders and others, who will endeavor to influence the Indians not to treat at all, unless provision be made for the payment of their debts; and indebtedness is inseparable from the present system of Indian trade.

Although these Indians were originally of different tribes, yet no distinction is now recognised or observed among them. They all describe themselves as "Pottawatomies," by which name they are known among the neighboring Indians. If possible, when a treaty is made, they should be united with their brethren on the Osage river; but it will be difficult to effect this object. The Indians say, the Osage river country is too far south for them; and they affect to believe it to be sickly; but the real reasons are believed to be a jealousy among the chiefs, and an opinion entertained by our Indians that their brethren on the Osage river already draw a larger share of annuities than they are entitled to, and that the injustice would be increased by any union of the tribes.

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To procure a suitable country to offer them in exchange will be difficult. It has been suggested to me, that if they should refuse to unite with their brethren on or near the Osage river, a country suitable for them in their present condition, where their large funds for educational and industrial purposes could be advantageously expended, and to which they would be willing to remove, might be provided for them by a treaty either with with the Otoes or Omahas, on the opposite side of the river. This suggestion I think a good one. The Otoes are very destitute as well as very troublesome Indians; and if a treaty which would give them larger annuities would at the same time secure their removal to a greater distance from the white settlements, two very desirable objects would be accomplished. Their lands are of good quality, and favorably located. The lands of the Omahas are also good, and would suit our Indians well if they would agree to accept them; but I am of opinion that they would not do so, unless a military post were first established up the river, strong enough to prevent any incursions from the Sioux. I have not conversed with any of the Indians concerning the Otoe and Omaha lands. Some of them have stated to me that the Nemaha country, if it could be procured, would suit them.

In every point of view, it is desirable that an early treaty should be effected with this people. * * * * * *

They are a well-disposed people, already considerably advanced in civilization, and most of them have very correct notions of the superior comforts and enjoyments of civilized life. As a general rule, I am satisfied that the dignity, magnanimity, generosity, and gratitude, which have been ascribed by fanciful writers to the aborigines of our country, are qualities which either do not exist at all, or have but a limited operation; but doubtless there are exceptions to the rule, and I think the Pottawatomies may be looked upon as constituting one. I came here with rather a low estimate of the Indian character, and was not, I think, predisposed to form opinions more favorable than the reality would warrant; yet I have been led to believe, that among this comparatively uncultivated and neglected people we have as great a proportion of integrity and honor as can be found among the same number of our own race, even when under circumstances far more favorable to the existence of those sentiments. Without any laws but those which nature dictates, without any "moral reform" societies, without any pulpit exhortations, without any lectures from the press, without any prisons or workhouses, and even without any adequate notions of a future state of rewards and punishments, these Indians may, nevertheless, be described as an upright and virtuous people. It is true that they are without the restraints as well as without the comforts of civilized life, and that the commerce of the sexes, for example, has yet much of the license so common in savage life, (if not peculiar to it;) but there is nearly always found among the parents a strong attachment to their offspring, and even between distant relations the most devoted affection generally prevails; nor are instances of connubial infidelity so numerous as a stranger would be apt to suspect. And although we have no laws established, yet, in cases of depredations, the large annuities furnished by the Government afford a ready means of punishing the offender, and securing redress to the sufferer; and the means are generally applied. It is, as I conceive, part of my duty to co-operate with the business men of the nation in this rude but effective administration of justice. But the character of our Indians shows to most advantage in the prompt discharge of the claims against them, so far as their means will go, when they receive their annuities for each year.

Here, however, the praise which I am so willing to award must cease. Although these Indians have more than the usual share of good qualities ascribed to the red man, they have also some of the bad ones. They are, as a body, honest in their dealings, and (if left to themselves, and not instigated by bad white men) faithful to the Government; but they have, at the same time, a full share of the natural indolence of the Indian, and depend for support almost entirely on the money received from the Government. This amounts at present to about $22 per year for every man, woman, and child, in the nation. It enables many of them to exist with but little exertion of any kind; and it is well known that the full-blooded Indian, reared in a bark lodge, and dressed in a hunting shirt, feels but little inclination for labor.

As these Indians have no good hunting grounds, they could not exist if their annuities were withdrawn; yet the question has sometimes presented itself to my mind, whether the large annuities received in money have not the effect of retarding rather than assisting their progress in civilization. Some of the half breeds have good houses and fields; they show a very laudable disposition to imitate the whites in their mode of life and manners, and would, if permanently settled, constitute an industrious and flourishing community; but while the full-blooded Indians can exist without labor, they will be found very apt to do so. Hence I have thought that, as they can no longer hunt to advantage, if they received but small cash annuities, and were properly supplied with agricultural and mechanical implements and teachers of those arts, the ultimate result would be more favorable; and I think this view of their affairs ought not to be overlooked by the commissioners in negotiating the proposed treaty.

These Indians have a grist and saw mill, built by their funds for the purpose, and a blacksmith's establishment under treaty stipulations; but they have no farmer employed, and do not, I think, need one until more permanently settled. They ought to have an additional blacksmith's establishment, if they do not treat next spring, and a male and female school teacher; the latter to combine instruction in needlework with letters. But the expenditure for all these purposes should be as sparingly made as possible, until the Indians are more permanently located, and then they ought to have, as their funds would enable them to have, a large manual labor school, on the plan of the institution in the Fort Leavenworth agency. Large academies, at a distance from the homes of the Indian children, may do some good, but the pupils are too apt to catch only the vices of the whites, and to return home with only the worst arts of civilized life. Such institutions can only educate a *few* out of the great mass; and when these few return to their homes, they find nothing to do with their acquirements, but are almost forced by circumstances to fall back into their original habits; and when they do this, they exhibit generally a deplorable union of the weaknesses and vices of the Indian with the shrewd depravity of the white man. Besides, only the males can well be sent abroad; whereas we all know that the influence of the women, in assisting to civilize the Indians, is much more potent than that of the men, because the mother, being more constantly with the children, cannot fail to mould their characters by her own views and sentiments. It was once remarked to me by a distinguished chief of the Choctaws, (himself a gentleman of cultivated mind and refined manners,) that one woman could effect greater results than one hundred men, in leading their people to adopt the fireside comforts and enjoyments of civilized life; and it seems to me manifest, that, without first introducing these comforts and enjoyments, it is idle to send teachers of religion and letters among the Indians, to spend their time and the money of the Indians in fruitless labors. Entertaining these views, if the Pottawatomies were permanently established in homes from which they would not in *ten years more* be required to remove, I would esteem it a delightful task to organize a male and female school among them, similar to that of the Shawnees and Delawares, confident that I should soon see them emerge from a state of semi-civilization to all the best habits, all the fireside comforts, and all the social enjoyments, of civilized life—to a condition in which they would not only be fitted to receive the truths of the gospel, but to understand and appreciate them.

Having thus given you a general view of the condition and wants of our Indians, allow me to make a remark upon the system of trade among them. It is essentially bad. The traders conduct themselves with propriety so far as the introduction of liquor is concerned; they do not even attempt to introduce it, but, on the contrary, use their influence to prevent the Indians themselves from going into Missouri for it. The system, however, is such that the individuals engaged in trade cannot well avoid giving large credits, and these credits not only swallow up their annuities, but leave a large sum each year to be added to that of previous years; all of which it is expected will be paid when the Indians come to make a treaty. This is the great evil. The goods are not sold at exorbitant rates; the competition among the traders themselves, and the shrewdness of the Indians, prevent that; but they could be furnished much lower, if payments were more regular and certain, than they can possibly be now. I hardly know what remedy to propose. The subject is surrounded by difficulties. I concur generally in your views, as expressed in your annual reports for the past three years; but I would not teaze the Indians with fruitless attempts to induce them to receive goods instead of money from the Government. Such attempts have only the effect of making them suspicious of the Government officers, and of raising up unkind feelings among them towards their agents. It seems to me that a better plan would be to appoint among the Pottawatomies, for example, one trader, to sell provisions, cattle, horses, and agricultural implements, and another to sell dry goods, groceries, ammunition, and so on. Then let each of these traders be authorized to credit the Indians to a certain amount, being an ascertained percentage on the annuity of each individual; let that sum be paid as the claims of the army sutlers are paid, but have it distinctly understood that any credits beyond this percentage shall be at the trader's risk, and shall not in any event be paid by treaty. This plan (the prices of the goods to be fixed by the resident agent or a council of neighboring agents, in the manner that the prices of the sutler's goods are now fixed by a board of administration) would avoid most of the evils of the present system, the greatest of which is the large amount of indebtedness which the Government is generally required to assume on making a treaty; and although its general introduction would impose much additional labor upon the agents, yet I have no doubt they would all be glad to have it adopted, in order to protoct the interests of the Indians and the Government.

During the past summer no liquor has been introduced by the whites into the Pottawatomie country, so far as I have been able to learn. Small quantities have been brought in by Indians, who go to the Missouri settlement for it; but there has been no serious disregard of the intercourse laws; and many of the Indians have exhibited a most laudable desire to suppress the use of the article entirely.

The presence of a company of dragoons has been an efficient aid to the undersigned in preserving order, and enforcing an observance of the intercourse laws; and if the suppression of illicit traffic, and the assistance of the undersigned in his duties, be objects of sufficient importance, in the estimation of the War Department, to require the continuance of the company here, I shall be much pleased with a decision to that effect. But so far as the protection of the Indians against the Sioux is concerned, it is very questionable whether the presence of the company is needed. Although the Sioux, during the past summer, made a severe attack upon our neighbors, the Pawnees, yet it is a matter of doubt with me whether these Indians are really in any danger. The Sioux have never, thus far, approached the Pottawatomies in a regular war party, but only in small hunting parties, as much for the purpose of committing theft as murder. So far, therefore, as the Government is under a tacit obligation to protect this people on the lands to which they have removed under treaty stipulations, that consideration should have no effect whatever; as while there is no danger, there is of course no call for protection. These Indians, however, are much afraid of the Sioux; and I have no doubt that if the company were withdrawn, they would discover many additional reasons for making a treaty next spring or summer. I do not advance this as a *reason* why the company should be withdrawn, but only as a matter of information for the department.

At the same time, the necessity for a large military establishment, at some point on the Missouri river within a range of two hundred miles above the Big Platte, is most apparent; and I trust that such a post will be immediately established. Fort Leavenworth is now of but little use, except as a depot for military stores, a place of rest for horses and men, and a scene of quiet enjoyment for the officers. It is located among Indians who subsist, in a great measure, by their dues from the Government, and who are already favorably disposed towards the whites; but it has no influence whatever in impressing the wild Indians, who alone are dangerous or troublesome, with adequate ideas of the power of the Government, or with a proper respect for its agents and officers.

It only remains for me to add, that the "Chippewas, Ottowas, and Pottawatomies," in this sub-agency, are about two thousand in number.

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All of which is respectfully submitted.

RICHARD S. ELLIOTT,
Indian Sub-Agent.

T. Hartley Crawford Esq.,
Commissioner of Indian Affairs.

No. 83.

Great Nemaha Sub-Agency, *October* 4, 1843.

Sir : I have the honor to submit the following report, in compliance with instructions, on the subject of the condition of the Indians within the Great Nemaha sub-agency, their progress in civilization, agriculture, education, &c.

Missouri Sacs and Foxes.—This tribe, this year, have raised more corn, pumpkins, squashes, beans, &c., than would do them if taken care of; they are, however, very generous in dividing with the Indians of other tribes that visit them for the purpose of begging—they will give as long as they have any to spare. They have been visited the past year by the Kanzas and Otoes frequently, who were on begging expeditions. They loaded their horses with sweet corn, and sent them home much pleased. There are many of this nation who work during the cropping season, assisting their wives and children in securing their crops; most of them have a great disposition to raise hogs, and frequently procure them during the winter, but are compelled to kill them in the spring, owing to the want of good fences to keep them out of their corn. I feel confident of being able to get the Sacs and Foxes to engage earnestly in agriculture, as soon as we are able to get them good fences made, which will be accomplished next year. The farmer gave them last winter all the corn he thought could be spared, reserving what would feed the work cattle and plough horses through the winter and spring. The winter was exceedingly long and cold, and the Indians stole the most of the corn which he had reserved, making it necessary to buy in the spring. I have no doubt but what the corn given to them last winter saved them in horses the full cost of the farm. The following will show the farming operations of the Sacs and Foxes: 200 acres in a farm under a superior fence, soil fine and productive; 65 acres in wheat, which is yet in the straw, and is much injured by rust; 40 acres in corn, which will produce fifteen hundred bushels; 15 acres in Irish potatoes, which will produce twenty-five hundred bushels, (good judges say more;) also, a large quantity of water melons, squashes, pumpkins, &c. It is my intention to give the Indians all the corn, wheat, and other articles, raised on the farm, after reserving what we want for seed, feeding cattle and horses through the winter and ploughing season. There have also been 80 tons of hay cut and stacked for them. The farmer, together with his assistant and three hands employed as laborers, have been engaged through the year in cultivating the farm, making fence, breaking prairie, building barn, mill house, and stables. Their blacksmith has been engaged in making and mending guns, traps, hoes, &c., through the past year. These tribes are at peace with all nations, and it is my opinion they desire to remain so. Towards the whites they manifest the warmest friendship at all times, and I am fully persuaded they are as sincerely the friends of the white man as any Indians living on our borders. They often boast of their neutrality during the war of 1812, between their brothers the Mississippi Sacs and Foxes and the whites, also the Black Hawk war.

The Iowas.—This nation this year has raised more corn, pumpkins, squashes, potatoes, beans, &c., than would do them, if taken care of, but, like the Sacs and Foxes, will find a ready way of getting rid of it, through their less provident neighbors, the Kanzas and Otoes. This tribe are in the habit of exchanging such articles as they raise with other tribes for whisky. Their crops this year are more abundant than they have been since their removal to the west side of the Missouri river. They have had the assistance this year of Mr. Aurey Ballard as farmer, (who has been of great service to them in their farming operations,) in whose family there are now, and have been for several years, four Iowa children—two boys and two girls—who are as far advanced in useful knowledge as white children of their age. One of the boys is the son of the principal chief of the nation, and is a very promising child. In the family of Samuel Irvin, teacher of the Iowas, there are two other Iowa children, who are about as far advanced in education as those of Mr. Ballard. They have notified me, as you will see, in a council recently held with them, that they did not wish a farmer another year. They have requested me to employ a blacksmith for one year, which I have done. They have set apart one thousand dollars for support of blacksmith's establishment. The smith is now engaged in burning a coal pit and building a shop, and will be at work in a few days. I have procured tools, iron, &c., for the establishment, on fair terms; the contractors agreeing to wait until next payment of the annuities for the money.

It is to be regretted that there was not provision made in their treaty for agricultural education and mechanical purposes. Such is the thirst among the traders of all descriptions for the money of this tribe, that it is impossible, when they are induced to do what will be of service to them, to get them to continue it for any length of time. There is a remedy, however, in my opinion, in the hands of the Government, for most of the evils which beset this people. I would most respectfully recommend a return to the old factor system, with modifications. Let the Government furnish the goods to the Indian agent, and make it his duty to give the Indians goods twice or three times a year, to the heads of families. I am well assured the Indians would be pleased with it, and receive in this way their entire annuity. It is impossible for me to exercise a greater influence than the traders of every description do. I have no money to bribe interpreters or chiefs to induce them to receive goods instead of money; and if I had, I should scorn to exercise such an influence. I also doubt the propriety of giving them so many goods at once, for any surplus would be sold immediately for whisky. Notwithstanding these are my opinions, I made every effort to induce them to receive their entire annuity for the next year in goods, according to the instructions received from you. There is one other remedy in the hands of the Government, for an evil which has brought this tribe to so low a state of degradation and misery. I allude to the manner of paying them their annuities. It has been the custom to pay the money to the chiefs. This might do well, if they were sober discreet men; but they are as abandoned drunken men as belong to the nation, and have little or no influence with the tribe. They are feared, it is true, and a common man knows that it might cost him his life if, in council, he was to object; consequently, when I made the inquiry, how they wish the annuity paid, I received for answer, "Pay it to our chiefs, that they may pay our debts." Their treaty says emphatically the money shall be paid to the nation; the regulations by which I have been governed say the inquiry shall be made, and their wishes complied with. It is a fact, that three of these monarchs squander, directly and indirectly, more than one thousand dollars per annum of the money of the nation apiece. They do it in this way: they contract debts and obtain goods, ponies, and whisky, on a credit, giving their notes for the money, and appropriating one-half to themselves, and give the rest to some vagabonds, whom they are pleased to call braves, from the fact that, at some time, these braves may have killed a squaw or stolen a horse. When the money comes, these monarchs and their braves get well paid by the traders for being honest and paying their debts, but the nation at large suffer. I have endeavored to shame them out of such practices, but they hold the doctrine that might gives right, and act it out, to the ruin of the nation at large.

I beg leave to call your attention to an agreement, herewith enclosed, which was fully understood between myself and the Iowas previous to my making the last payment, (and which they have refused to ratify since the payment, but had agreed to do so before I paid them.) This evil calls for the immediate action of the Government. It is to be hoped that I may be instructed immediately on this subject. This tribe are remarkably intemperate. They have sold more than one hundred of their new blankets for whisky since the payment, and many other articles of merchandise. When the goods give out, they will sell their guns, horses, or any other articles which they possess that will be of any service to such murderers and robbers as sell them poison. They have only killed six persons of their own nation since my last annual report, and one Frenchman. They may be said to be in peace with all other tribes, except the Sioux; but they are so remote, however, that they never meet.

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All of which is most respectfully submitted.

Very respectfully, your obedient servant,

W. P. RICHARDSON,
Indian Sub-Agent.

D. D. Mitchell, Esq.,
Superintendent Indian Affairs, St. Louis, Missouri.

No. 84.

Council Bluffs Agency, *August* 18, 1843.

Sir: The time has arrived when, in compliance with instructions and the regulations of the department, it becomes my duty to report the condition of the several Indian tribes within this agency. Otoes and Missourias inhabit a country bounded by the Missouri river on the east, and on the north by the river Platte, the Little Nemaha on the south, and by an undefined boundary on the west.

The Otoes are now on the chase, and were in quite a starving condition previous to starting on the hunt. I, during the past winter and spring, dealt out to the Otoes 22 barrels of pork, which had been purchased for them as a part of their last year's annuity; also, by their request, I purchased for them some 995 bushels of corn, as likewise 15 barrels of flour, (payable out of their annuities,) which had a tendency, together with their begging and stealing, to prevent great human suffering of hunger until May and June, at which time there was but little left with the whites or Pottawatomie Indians, in the provision line, for them either to beg or steal; consequently, numbers of the Otoe children have perished for want of food. Some ten lodges of the Otoes have returned to their village, as they had no horses to go on the chase. Their very appearance denotes great suffering from hunger, having subsisted almost entirely on roots and herbs.

The Otoes have expressed a desire to sell their country south of the Platte river, reserving a small tract, bounded by the Saline creek on the one side and the river Platte on the other, and running west, which reserve lies some 50 miles up the river Platte. This sale they propose with a view of getting a money annuity; and they evince a spirit, that should the Government try to treat with them, they will refuse every other proposition than money. They say many hard things against the Government when they witness the Pottawatomie payments, and allege that the country on which the Pottawatomies reside is yet Otoe lands. They also assert that the country between the Nemahas, west of the half-breed lands, is yet theirs. In fine, the Otoes are restless, turbulent Indians, who would eagerly take the last morsel of bread from the white man, and then insult him if he did not speedily procure more. A party of Otoes, in the month of June, fired on some peltry boats that were descending the Platte river, nearly opposite to their upper village. They fired two rounds with five guns, and dangerously wounded one or more Americans. This was premeditated on the part of the Otoes, as they had declared to their traders, during the past winter, that they would have the blood of a white man before the year passed away. It has been a common out-door boast of these Indians, that the white man was afraid, and that the troops dare not chastise them; and now, unless something very efficient is done by the troops on their visit to the Otoes, by which they shall be brought into entire subjection, the lives and property of American citizens will be very insecure, who are in or contiguous to the Otoe country.

The conduct of the Otoes towards their blacksmith and assistant (two more unexceptionable characters have not been in the Indian country) became insufferably outrageous, on several occasions drawing deadly weapons on one or both, and wresting by violence property from their possession which had been left for repairs by other Otoe Indians. Their general demeanor towards those two young men was such (and the assistant could talk good Otoe) that they considered their lives not safe, whilst endeavoring to do their duty with them, and they both left in the month of May last.

The depredations on the traders and frontier stock during the past season have been less than were anticipated; yet some of the traders lost considerable stock, both of horses and cattle, whilst the Otoes were quartered upon us during the last winter and spring. As the animals *durst* not be turned out amongst these starving desperadoes, much of their stock perished for want of food. During this time, every exertion was made by me to get them away; but all in vain, until they had accomplished their object of begging and stealing all that could be got hold of at or near this post, on several occasions forcing houses, and carrying away the property of citizens living here and in the vicinity. The privilege that they are taking they claim as a right, as they contend this is their land, and that the agent, traders, and others, must feed them, at their asking for the privilege of remaining on it. They, on several occasions, during the latter part of winter, ordered the Omahas' blacksmith to leave the country, unless he would feed and work for them, and declared that it would be at his peril to cut either fire or coal wood on their lands, unless he fed them. The country around this post is claimed by the Omahas; and most likely, when the title is investigated, the right will vest in the latter.

It would be well, in order to avoid innumerable difficulties with the Otoes, that this threatening difficulty be adjusted at the earliest day practicable.

The limited planting of the Otoes bids fairer this season than last, but will do but little towards supporting the nation. Many complaints are made by agents having charge of frontier Indians, of the illicit trade carried on with whisky; but little trouble has fallen to my lot on that score, since I reached this post; I attribute it, in part, to the remoteness of the most of the Indians of this agency, and to their poverty. As it is money that the lawless frontier man is seeking, he finds that the Indians of this agency are not worth attending to; yet, during the past winter, an illicit trade was carried on with a small party of Otoes, who passed most of the winter on the Missouri river below and contiguous to the white settlements. coonskins, blankets, guns, &c., composed the trade for whisky. An Indian whisky seller will cheerfully give time, labor, and hardship, worth five or ten dollars, though he only get in return for a pint of whisky a blanket worth one or two dollars. So long as it is tolerated, and considered the privilege of an Indian to go to the settlements and purchase whisky, it is in vain that your agents and troops try to stop the traffic. I would recommend, in all such cases, that agents and military officers be directed to send for the accused and witnesses, hear the evidence, pronounce the sentence, and inflict the punishment; and a very few such cases would entirely put to rest this destructive traffic. It need not be contended that Indians will not submit to this kind of correction—a subdued Indian, (and until he is subdued you can do but little for him) will submit to any thing that he is satisfied is for the good of his nation; and the worst drinkers amongst them do say, (as far as I am informed,) "keep the whisky from amongst us, and we will be glad." In justice to the licensed traders of this agency, I would say, that they seem to evince a disposition to assist in putting down this nefarious traffic.

I would remark, that there were several half breeds and others residing at this place, that were considered by the traders as not being trustworthy, and as it became necessary for them to leave here, they have gone to the half-breed lands between the Nemahas; and, as I am informed, they are preparing regular-built dogeries, where, no doubt, they will do a great deal of mischief; from character, they are well skilled in whisky trade.

It will be seen by a late census of the Otoes and Missourias, that they number nine hundred and thirty-one souls; that their numbers are about the same as heretofore represented.

Omahas follow the chase as usual. They claim a country bounded by the Missouri river on the east, by the river Platte on the south, by the Pawnee country on the west, and by the Poncas Indians on the north. The Omaha country is very thinly timbered, though prairie is not so universal as in the Pawnee country. The Omahas, during the present season, have removed to their former village, near the Missouri river, about one hundred miles above this agency, where they have been greatly annoyed by the Sioux, having lost some thirty of their nation by war excursions of their enemy the present season, and at the same time losing their horses, peltries, &c.

The Omahas waited on me previous to starting on the summer's hunt, and most earnestly begged for arms and ammunition, to enable them to defend themselves against their enemies, asserting that their great father had promised to protect them, and, to use their own language, "If our great father will now furnish us arms and ammunition, we will defend ourselves," alleging that the game had left their country, from which cause they were so poor as not to be able to purchase either arms or ammunition. This kind of protection, if it meet the approbation of the Government, would seem to be altogether satisfactory to the Omahas. The Sioux, from all that we can learn, are resolved on exterminating this little band of Indians. In the month of May, whilst on my journey to the Pawnee villages, I was met by the principal chief of the Poncas Indians, who was paying me a visit for the purpose of soliciting the Government to purchase a part of his country, by which to enable his people to purchase arms and ammunition to defend themselves against their enemies, (the Sioux.)

Some few days after the visit of the Omahas above spoken of, I was called on by an express from the Omaha camp, asking for the assistance of the troops to defend them against their enemies, and to retake thirty-six horses which the Sioux had taken in a skirmish a few days previous.

The Omahas are wishing to sell the southerly part of their country, and are desirous that the Government would assist them in agricultural pursuits. The Government, by treaty stipulations, are indebted to the Omahas the breaking and fencing of one hundred acres of prairie. But, until the fierce and bloody war now prosecuted by the Sioux shall subside, it will be vain to try to prosper the Omahas in agricultural pursuits. A union is about forming between the Omahas and Poncas, to live together as one people. They speak the same language, and doubtless in days past were the same people.

The Omahas' corn planting of this season is quite limited, though more extensive than in some previous years.

A threatening difficulty is presenting itself between the Omahas and Otoes, about the right to the southerly part of the Omaha country; the Otoes also claim it. I would recommend, as both nations want to sell, that the earliest opportunity be taken to settle this right of soil.

Pawnees follow the chase, as usual. They claim a country bounded on the south by the Platte river, by Shell creek on the east, and by undefined limits on the north and west. Their country, except the islands in the streams, is almost entirely prairie; the soil is of a fair quality in the general; the latitude high and cold. The severity of the last winter caused the

Indians of this region much suffering, and a scanty preparation of subsistence for the spring; losing great numbers of their horses in the deep snows.

Owing to the lateness of the spring, the farming operations of the Pawnees were very much retarded, as the team that was with them was quite reduced by necessary use and the severity of a hard winter, and I was necessarily detained with the three teams which were turned over to the farmers this season until the coming of grass to subsist them on, and the general overflow of the country also added many days to the detention; but, in the last days of May, I succeeded in reaching the Pawnee village with the teams, and during my tarry saw the farmers get fairly under way, turning prairie with ploughs of their and the smith's constructing, which ploughs do well, and were held for some time by the Indians. But the farmers, in order to have their business go on without any waiting for an Indian ploughman, attached a pair of wheels to each plough, which is considered by many as being a preferable plan on smooth prairie to having a man to hold. The farmers had, up to the 15th of July, broke about one hundred and forty acres of prairie, the early breaking of which had been planted in corn, and promises well for fresh sod. The Indians had, in part with the plough, but mostly with the hoe, prepared and planted quite a quantity of ground in patches on the ravines, which does not promise so well, owing to the late difficulty with the Sioux, which caused them to leave their settlements immediately after said occurrence; consequently, their corn was not sufficiently worked to make a good crop.

The commencement which we were making in agriculture, and the spirit evinced by the Pawnees to receive instruction, was quite encouraging to those who witnessed their movements. In addition to the breaking, planting, &c, the farmers and Indians at the Willow Creek farm, had, previous to the unfortunate 27th of June, completed about eighty rods of sod fence.

Those Indians who had staid back, on seeing the preparations that were going on by the farmers with their four teams turning prairie, were becoming convinced of the advantages which they might receive at the new location; and at the proper time for building of their lodges, when the grass was fully grown, most, if not all, of the four bands of Pawnees would have located at one or the other of the farms. What the Pawnees will now do is conjectural, as when they left they said they had no minds. The defeat which they have met with may have a tendency the more closely to unite, but of this we have to wait to hear from them. The new village which met with the late disaster by the Sioux was built by Grand Pawnees, Republicans, and Tapage. In the battle on the 27th June, twenty out of forty-one lodges were burned, in which battle sixty-seven Pawnees were slain, and twenty-six wounded, many of whom have since died; and in their hunting and war excursions, since the 1st of March, sixty-nine others have been killed by their enemies—making one hundred and thirty-six that have died in wars during the past spring. Their loss of horses is estimated at some four hundred during this time; consequently, the Pawnees are left very poor. They ask, through their missionary, if a stop cannot be put to this savage warfare, and if they cannot, in some way, be remunerated for the loss of their property, which is estimated at from $6,000 to $12,000. One thing is certain, that if this fierce savage war continues, we shall not succeed in civilizing the Pawnees.

We learn by the upper Missouri traders, that the Sioux have declared themselves to be the lords of the plains, and are resolved on exterminating the Pawnees and Omahas, if not all the border tribes; that the Sioux started this season, from five to seven thousand strong, for that purpose; but, owing to some dissensions amongst themselves, only a small number reached the Pawnee villages. Our border Indians frequently complain that their father will not permit them to retaliate. As it is, the Sioux seem to be waging a war with apparent impunity, and, as there has been no formidable retaliation for some years, it gives the Sioux fresh confidence, and makes them the more fierce. The forbearance that is exercised towards those warlike Indians is to all appearance making them worse, (as is clearly manifested in the case with our Otoes—as they were sympathized with some three years ago, they have ever since been getting worse;) and unless our border Indians in some way be protected, they in time will all be cut off. Would it not be humane to accommodate those border Indians that are so poor as not to be able to purchase arms and ammunition, to furnish them with the means of defence, when they say to the Government, "furnish us the means of defence, and we will defend ourselves?" Had the Pawnees been provided with arms and ammunition in their late fight, they would have succeeded in keeping off the Sioux. The farmers had loaned the guns which were put into their hands as a means of defence. Except those, there were probably not ten guns in the village. The school at the Pawnees, to all appearance, cannot succeed as to teaching of letters. Mr. Allis, who has been long in their country, and has now quite a knowledge of their language, and who, owing to these advantages, together with naturally being a good man, does not stand second to any man as being useful to the Pawnee Indians.

A school for teaching letters, if even the children could be kept at school that portion of the year that the Pawnees are at their village, would be quite unavailing. I had hoped, so soon as we had something to subsist a school on, to be able to have a school the year round; but the Pawnees do not leave their children at school, when they leave the village, lest the Sioux make them captives. The day may come, if we can continue our benevolent works with the Pawnees, when teaching letters may be prosecuted to better advantage than at the present.

I would advise (if it be consistent with the regulations of the department) that the teachers be directed (for the present) to perform the duties of operators and instructors in agriculture; the field is large and their instructions will be useful in that science.

The men in the employment of the Government at the Pawnees have erected small log cabins, covered with sods, to reside in.

The blacksmiths of this agency have been appropriately employed through the year by working for the Indians; as it seems to be a matter of necessity for them to make their own coal, several weeks of each year are devoted to that service.

I have not yet had an opportunity to take a census of the Omahas and Pawnees, but am in hopes to be able to take their numbers this fall.

September 7, 1843.—We learn from the Pawnees, who have just arrived at this post for their annuities, that they design persevering at their new locations. Those of the village that met with the disaster by the Sioux of the 27th June last will live in temporary lodges for the present, as the putrefaction of dead bodies, both of Indians and horses, renders it intolerable for them to stop at that place.

The Pawnees have made an unusually bad summer's hunt, and will have to leave early on their fall and winter's hunt, to procure a subsistence, though their corn is much better this season than last; but they wish to cash away the most of their corn for the spring.

Very respectfully, I am, sir, your obedient servant,

DANIEL MILLER, *Indian Agent.*

D. D. Mitchell, Esq.,
Sup't Ind. Affairs, St. Louis, Missouri.

No. 85.

Fort Leavenworth Agency,
October 1, 1843.

Sir: In compliance with the regulations, I make the following report of the condition of the Indians within this agency:

SHAWNEES.

This tribe is gradually increasing in agricultural pursuits; their blacksmiths have been constantly engaged during the year in making and repairing agricultural implements. Although they have two blacksmiths, they are unable to supply all their wants; they have raised an abundance of grain to supply all their wants this year, and will have a surplus left.

KICKAPOOS.

This tribe, like the Shawnees, are greatly increasing in agricultural pursuits; they have no blacksmith nor farmer; a small part of them still follow the chase. I think about two-thirds of the tribe are engaged in farming. I think they will have a large surplus of corn, which they can dispose of to their trader; they raise Irish potatoes, pumpkins, cabbages, beans, melons, &c. They also find marketing at Fort Leavenworth.

DELAWARES.

This tribe is gradually increasing in agricultural pursuits; they, I think, have raised a sufficient quantity of corn to do them; they also raise potatoes, cabbages, pumpkins, beans, and peas, and vegetables of various kinds; their blacksmith is mostly employed in making and repairing agricultural implements; they however have some work done on their guns and traps; a large number of the young men still follow the chase.

MUNSEE AND CHRISTIAN INDIANS.

These people live among the Delawares, and may be properly included with that tribe.

STOCKBRIDGES.

This small remnant are located near the Missouri river, near and below Fort Leavenworth, in the Delaware country, where they have been for the last three years; during that time they have been very industrious; they will raise this year a large surplus over and above home consumption; they raise corn and potatoes in abundance, pumpkins, beans, peas, cabbages, &c.

KANZAS.

This tribe this year will have corn plenty to do them; they raised but little last year; they were almost in a state of starvation this spring; at their pressing request, I employed about eighteen hands, and cultivated about two hundred acres of corn, and planted thirty bushels of Irish potatoes for them; this I agreed to do, provided they would turn in and plant and tend as much corn as they could, which they did, and to my surprise they raised themselves more than they have done for many years. I thought it almost impossible for them to do so, as they had no provisions, nor nothing to buy with. Fortunately for them, the buffalo came in near their village; they also subsisted a part of the time on roots. Upon the whole, they will have plenty of corn to do them this season, if taken care of; their mill is in contract, and will soon be completed. I will remark, however, that it looks like a heartless undertaking to get them to become civilized or agriculturists; they are the foremost of all other tribes to make promises; they certainly are the greatest eaters that I have ever seen, (Osages excepted.) Their blacksmith is mostly engaged in repairing their guns, traps, &c. They depend mainly on the buffalo for a subsistence; their farmer has been engaged this year in farming for them. This tribe and the Pawnees have been at war for many years. With this exception, all the tribes within this agency are at peace and friendship with all other nations. The above statements embrace the only remarks I have to make in addition to my last year's report.

TEMPERANCE.

Much has been said and written on this subject. I will just remark here, that if you will have a supplement to the present laws, to imprison as well as fine for the crime of selling or being found in the Indian country with ardent spirits or wine, and hold all offenders to bail for their appearance at court when the writ is served, your agents will then be able to succeed to a great extent, in putting a stop to the introduction of the article; without which, you might almost as well have no law on the subject. What do nine-tenths of the Indian whisky traders care for your judgments of $300 or a $1,000? Not a bit more than they would for so many cents; you have all the trouble to go through all the forms of law, recover a judgment, pay all the cost, and there is an end to it. Now, sir, this is no idle tale. I have lately proved it to be a fact in the case of Milton McGee.

I enclose, herewith, reports from the superintendents and teachers of the various schools within this agency.

I am, very respectfully, your most obedient servant,

RICHARD W. CUMMINS,
Indian Agent.

D. D. Mitchell, Esq.,
Sup't Ind. Affairs, St. Louis, Missouri.

No. 86.

Council Bluffs Agency, *July* 1, 1843.

Sir: On last evening I was waited on by an Omaha brave, as an express from the principal chief, asking for the assistance of the troops to defend them against their enemies, and to retake 36 horses, which were forcibly taken from the possession of a small hunting party four days since, by a large war party of Sioux. When the Omahas were attacked, a skirmish took place, in which three men and two women of the Omahas were killed, and one Sioux; the Omahas acting on the defensive. We are not placed in a situation, at this time, to render the service which the Omahas ask for. Circumstanced as the Omahas and Sioux are, we are left in such a situation as hardly to know what to advise. The Omahas are a small defenceless band, asking protection against their formidable enemy; and, from all that we can know, the latter are waging a war of extermination against the former. It would seem not to be advisable for the Government to commence hostilities against the Sioux at this time, which might lead to protracted difficulties between the Sioux and citizens of the United States; yet we cannot but listen with painful sensations to the complaints of those border Indians, and particularly this little defenceless band of Omahas, who are picked off on all occasions by their enemy. Thirty-seven of their nation have perished by the Sioux this season. Owing to the game receding, the Omahas have to seek food in the more distant prairies, which makes them more accessible; and unless they can be provided for in agricultural pursuits, where they will be more remote from their harassing enemy, the same fierce and cruel war, in all probability, will continue. The Omahas have this season returned to their old village, near the Missouri river, and from present appearances they will have to abandon it again. What assistance or protection in such cases can we render?

Very respectfully, &c.

DANIEL MILLER,
Indian Agent.

D. D. Mitchell, Esq.,
Superintendent Indian Affairs, St. Louis, Missouri.

No. 87.

Acting Superintendency,
Southwestern Territory, September 30, 1843.

Sir: I have the honor to submit for your consideration my annual report in relation to the several Indian tribes within the Southwestern Territory, embracing, as it does, the Cherokees, Choctaws, Chickasaws, Creeks, Seminoles, Senecas, Senecas and Shawnees, and Quapaws. My last annual report was so full and explicit that it will be scarcely necessary for me at this time to do more than refer you to it, and to reiterate the sentiments and opinions therein contained. The various agents and sub-agents within the superintendency will each enter minutely into the situation and progress of the tribes under their immediate jurisdiction. Their reports will be submitted to you. I shall therefore do no more than refer briefly to each tribe, throwing out a few suggestions, leaving the details to be supplied by the different agents.

The Cherokees, you are aware, are more intelligent as a whole, and further advanced in civilization, than any other tribe within my jurisdiction. Many of them are men of decided talents and education. Their government is founded upon republican principles; their constitution and laws, which are printed and circulated through all parts of their country, are wholesome, and well suited to their condition and wants; their laws are therefore well understood and generally respected. They are by no means sanguinary, murder being the only crime punishable with death. The recent outbreak which occurred immediately after their fall elections, and which terminated in the death of one or two individuals, was calculated at first to create alarm. I am satisfied, however, that, while these unfortunate occurrences may occasionally take place, it is by no means an evidence of the general feeling of the Cherokee people to countenance such murders; but that the causes may be traced back to the late treaty and the murders of the Ridges and Boudinot. Their own laws are fully adequate, in the manner in which they are executed, to suppress all internal difficulties. More blood may be shed before this unhappy feud shall be subdued, but I do not for a moment anticipate that it will lead to an open outbreak between the parties. It is a delicate matter for us to interfere; the Cherokees are very sensitive of their rights, and perhaps an interference by the United States would result in little good, unless the nation was likely to be involved in a civil war. The Cherokees are progressing in wealth and in civilization. I regret that the influences already stated have retarded their advancement, and prevented as rapid an improvement as might otherwise have been expected. Education is popular among them, and a disposition to extend its benefits to all classes, and to avail themselves of its advantages, is evidently increasing.

While on the subject of the Cherokees, permit me to remark, that, from their advanced state in civilization, they are now prepared to adopt some measure to do away the long-established custom with Indians, of a community of rights in the soil. Some plan to effect this object would, in my opinion, greatly expedite their improvement. As the pursuit of agriculture is the first step towards civilization, so is the division of property (a knowledge of *mine and thine*—so that each may be able to distinguish his own, and be able to separate it, and keep his own lands distinct from those of the nation) one of the surest evidences of progressive improvement in the arts of civilized life. It is, I think, desirable that the Cherokees themselves (who alone can move in this matter) should adopt some plan to have their lands surveyed, and so allotted as to give to each family their improvements, and such additional lands as would add to their comfort, or be necessary for farming purposes. Let each receive a title from the Cherokee nation, under the general guaranty of the United States, to be held as individual property, subject to such restrictions as will prevent the alienation thereof to any other than Cherokees. Should this be done, another step will have been taken by the Cherokees in the scale of civilization; and they will thenceforward advance with rapidity from comparative barbarism, until they shall have attained a rank in the scale of humanity, unlooked for if not unhoped for by the most sanguine philanthropist. I have merely thrown out these hints for your consideration, relying upon your better judgment to mature a plan which will consummate an object that I consider of the highest importance for the well-being of the Cherokee people.

I am happy to inform you that the condition of the Creeks is constantly improving. As a whole, they are industrious, and will this year raise an abundance, indeed, a great surplus, of corn, which they will have for sale. They have also commenced, to some extent, the cultivation of rice, which will add much to their comfort in the way of living. They have suffered but little from sickness during the past season, and, as they have now become acclimated, it is but reasonable to suppose that they will not again suffer from disease, which was the case the first two or three years after their emigration. I have nothing to add to my report of last year in relation to their country. It is ample, both in extent and fertility of soil, for the wants of a much larger population. They are beginning to have a few mechanics of their own, in addition to the four blacksmiths and assistants, a wheelwright and wagon maker, furnished under treaty stipulations. These are invaluable to the nation. They have not as yet adopted a written constitution and laws, as the Cherokees and Choctaws have done. The unfriendly feelings entertained by many of the Creeks to whites, as mentioned in my last annual report, is gradually and most certainly wearing away, as is also the feeling of jealousy which at one time existed between the upper and lower towns. Roley McIntosh is the acknowledged principal chief of the Creek nation, and all cheerfully submit to him as such. It is but justice to the Creeks to say, that their whole conduct, since their emigration, has been of the most friendly character; and, while they are the most formidable of the tribes on the frontier, they are not the less to be relied on for their fidelity to the Government of the United States.

The Seminoles, who have mostly settled on the Deep fork of the Canadian, within the limits of the Creek nation, have, since their emigration, been quiet, and I apprehend no outbreak or difficulty among them. The portion of country they occupy is well adapted to raising corn, melons, pumpkins, beans, and lately they have cultivated to some extent rice. These, with other vegetables, add much to their comfortable subsistence. The disputed question, in relation to negro property, between the Seminoles and Creeks has not yet been adjusted, and I recommend that immediate measures be taken to have these difficulties brought to a close, as otherwise, if they remain unsettled, they may, and probably will, lead to unpleasant collisions between the parties. The Seminoles, you are aware, will not receive an annuity after this year; by limitation this treaty provision expires. I consider this very unfortunate. It is a well-known fact that the country they left was well adapted to the idle habits of this tribe; it abounded in game, fish of all kinds, &c., and from the earth they were also able to procure a good substitute for bread, without labor. They are now in a country without game, exposed to a colder climate. If they therefore cease to draw even the small pittance which, by treaty stipulation, they have hitherto enjoyed, it may readily be supposed that, with a change of country for the worse, and their annuity expired, their condition will be truly wretched. The location of these Indians among the Creeks is also a subject that requires revision, not only to satisfy the Seminoles, but the Creeks; it is so desirable that the conflicting difficulties between these tribes should be speedily adjusted, that I again recommend the subject to your especial attention and favorable consideration.

I have no changes to report in regard of the Senecas, the mixed bands of Senecas and Shawnees, and Quapaws, constituting what is termed the Neosho sub-agency. The facility with which they can procure whisky, by reason of their proximity to the white settlements of Missouri, still exists, and must, as long as it continues, have a tendency to retard their improvement.

The Quapaws are greatly benefited in their agricultural pursuits, under the management of the farmer provided by treaty. The mill erected by the United States for the Senecas is still in successful operation. In addition to the saw mill, the grist mill is of good construction, and being equal, if not superior, to any in that section of country, it is resorted to by the whites for the purpose of having their wheat manufactured into flour. This mill is thus made a source of profit and convevience to the Seneca band, many of whom raise wheat, which is made into flour at their mill. The country embraced in the Neosho sub-agency is fertile; fine springs are also found in the country, and general good health is enjoyed by the tribes. They have blacksmiths, assistants, and iron and steel, furnished them under treaty stipulation.

Since my last annual report, the Osages have been transferred from my superintendency to that of St. Louis. I regret to say that, while they were under my general supervision, I could see but little change for the better in their habits and character. Their fondness for the chase and their roving disposition still continued, and rendered them wholly averse to a settled agricultural life. The fact that game is constantly decreasing must and will force them, ere long, to abandon their erratic character, and incline them, of necessity, to the more peaceful cultivation of the soil.

As the immediate agent of the Choctaws, it will be expected that I should go more into detail, in relation to their situation and prospects, than I have thought it necessary to do respecting the other tribes within my superintendency. It affords me great pleasure to state to you, that a progressive improvement in the arts generally of civilized life is visible throughout the Choctaw country. They are an industrious and frugal people; many of them are enterprising and intelligent citizens; they are more favorably located for cultivating cotton than any of the tribes—their lands extend from the Arkansas to Red river, embracing on the latter an extensive and productive cotton-growing country. There are some ten or a dozen cotton gins now erected. Heretofore stock raising has been the general pursuit of the Choctaws, but their location and interest will make them turn their attention to the cultivation of cotton. Their country, especially on Red river, is not only suited to raising this valuable staple, but also the various necessaries of life; their large and extensive prairies afford them abundant range for stock. Many farmers exhibit a neatness altogether unlooked for in the Indian country. They may be truly classed as an agricultural people.

In addition to the four blacksmiths, assistants, and millwright, furnished by the United States, the Choctaws have others of their own, located at convenient points in the nation. Lately they have been furnished by the United States, under treaty stipulations, with a number of looms and wheels; many of the natives spin and weave their own apparel. There is also found in the nation salt water, which is manufactured into salt by an enterprising native of the nation. Education is highly prized among the Choctaws. It is a source of pride, as well as pleasure, to have it in my power to state that they are among the first, if not the very first, of the Indian tribes who have appropriated a portion of their regular annuity, heretofore paid *per capita*, to the support of schools in their nation. The sum which they have set apart is $18,000—an amount sufficient, in addition to other education funds, if prudently managed, to afford the means of education to all the children of the nation; and, from the interest manifested, few will fail to avail themselves of the privilege. But, upon the subject of education and schools generally, among the tribes of my superintendency, it is my design to address you fully in a separate report. Within the past year the Choctaws have amended their constitution. Their laws previously were enacted by a legislative council, consisting of forty members, who convened as one body, annually, on the first Monday in October. At the opening of a council a speaker and clerk were elected, and in no legislative body with which I am acquainted could there be found greater propriety or decorum in the transaction of business. The session usually lasts two weeks, and the members are allowed a per diem pay of two dollars. As stated in a former report, the Choctaws have no principal chief, but, under their constitution, each of the four districts, into which the nation is divided, three being Choctaw and one a Chickasaw district. A majority of these chiefs can exercise the veto power over any law passed by the general council of the nation, subject, however, to have the veto removed by two-thirds of the general council. By the altered or amended constitution, to which I have alluded, their legislature is now intrusted to a senate and house of representatives, and their joint concurrence is necessary to the passage of all laws. Thus it will be seen they are gradually adopting the form of our State Governments as they exist. Judges are elected, and trial by jury is guarantied to every citizen. It is gratifying to see the Choctaws, who have always been conspicuous, when contrasted with the other Indian tribes, for their truthfulness and fidelity, and for their uniform friendship to the whites, thus abandoning all their former habits and adopting slowly, but surely, all the blessings of good government, and the comforts and refinements of civilized life. Religion has spread her benign influence over this tribe, and it may truly be called a church-going people. In no country are the laws more respected or more certainly enforced when violated; an instance of robbery, or murder, by a Choctaw, of an American citizen, while travelling through the nation, is not within my recollection.

The Choctaws, in my estimation, are fast approaching that stage to justify the same action in relation to a division of lands that I have suggested for the Cherokees. I know of no step which could be taken that would more certainly tend to promote their well being and incite them to industry.

The Choctaws have passed some laws against the introduction of whisky into their country. I have found great good resulting from the energy of a body of light-horse organized by the nation, and paid by the United States under treaty stipulation. They are not only ready to execute orders for the apprehension of persons improperly in the nation, but they seize and destroy whisky wherever found, in execution of their own laws. This decidedly is the preferable mode to prevent the introduction of spirituous liquor into the nation, as little good can be done unless the authorities of the nation act in concert with the agents or troops of the United States.

Many of the Chickasaws still reside out of the district allotted to them, settling, as it is their right and privilege, promiscuously among the Choctaws. Their district is however filling up. Their interests require that they should be brought together, as with their large means they cannot receive the same benefit, in schools and the mechanic arts, that they could do were they more densely together. The Chickasaws exceed but little over five thousand in number; they have invested near two millions, from which they will soon be receiving the interest. This fund will enable them to educate every individual in their nation, and to extend the arts of civilized life among them.

I am happy to state to you, sir, in closing my report, that there is a general improvement in the situation and moral condition of the tribes within my superintendency. They desire education, and manifest a willingness to do all in their power for the establishment of schools in their own country. As I have before stated, this feeling deserves encouragement, and I am satisfied that but a few years will pass away before they will be disposed to abandon their mode of distributing their annuities, and devote them to the promotion of education.

All which is respectfully submitted.

WILLIAM ARMSTRONG,
Acting Sup't Western Territory.

Hon. T. Hartley Crawford,
Commissioner of Indian Affairs.

No. 88.

Chickasaw Agency,
Fort Washita, September 4, 1843.

Sir: In conformity to the regulations of the Indian department, I have the honor to transmit the following report of the Chickasaw tribe of Indians:

Nothing of any great importance has transpired in the nation since my last annual report. This spring and summer I have visited a greater part of the country, and find the Chickasaws improving in the cultivation of the soil; not only improving in the mode and manner of cultivation, but they are extending their fields. Some of the Chickasaws have five or six hundred acres of corn in cultivation this year, besides cotton, wheat, oats, and rye; in fact, every Indian family in the nation are raising enough corn to subsist them for a year; but the crops of corn will be cut short one-fourth by the drought. They would increase their farms, if they had a market for their produce; but, unfortunately for them, the competition from Texas is so great in this country, and they being prohibited from taking their corn into that Republic on account of the enormous tax on corn, (which is twenty cents on each bushel,) they are satisfied with just enough to live upon. While upon this subject, I think it would be nothing but sheer justice to make the citizens of the Republic of Texas pay the same amount of duty to the Indians that the Indians would have to pay them. But my opinion is, that the citizens of the Republic of Texas ought not to be permitted to bring any articles of sale into the nation; and this opinion is formed from observation. There is not a Chickasaw or Choctaw but what is opposed to it; even the traders (that is, the native traders) are opposed to it, and their feelings are increasing in that respect. There are no people on earth more jealous of their rights than the Indians. It is from Texas that two-thirds of the whisky is brought into the country. It is not brought in by citizens of Texas; but they keep distilleries and whisky shops just on the south bank of Red river, where the Indians go and get drunk, give their guns and horses for two or three gallons of whisky, which they bring in the nation; but I am happy to say that for the last two years the Indians have been much more temperate than previously. But there is a large distillery putting up just on the south side of Red river, where large quantities of whisky will be made, and I dread the time when it will be in full operation. Keep whisky from the Chickasaws and they will improve every day. They have all quit the chase for support. Some of them, once a year perhaps, go out on a pleasure trip to hunt buffalo; but their attention has been drawn to farming, and the habit is growing.

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The Chickasaws, as yet, have the same kind of government that they had when they lived east of the Mississippi. Some are disposed to change it, and have it agreeably to the government of the Choctaws, as they agreed to do when they treated with the Choctaws for this country; but some of the older Chickasaws say they are unwilling to give up their ancient rule and custom. Their rule pretty much is, when a chief gets old or sick, he says that some man, naming him, is to have his place when he dies, and the Chickasaws must look on him then as a young chief; but a good number of the younger men are getting tired of such a government, and want a more republican one, which would be decidedly the best; for it would create a spirit of emulation among the young men, and of course would have a great tendency to improve the Chickasaws as a nation. The Chickasaws have had, for the last few years, three blacksmiths; one was situated on Bushy river, one near Fort Towson, and the one that was on Blue last year has been moved to Washita, about three miles from the agency. The one on Bushy was discontinued on the 31st day of July last. Mr. Hawkinbury, who was the smith at that place, was a good one; but he got to be intemperate in his habits, and had frequent quarrels with the natives, and I discharged him. The other two smiths have discharged their duties well, and they are as good men as could be got, I expect, in the United States.

There are three fine cotton gins belonging to individual Chickasaws, and two or three more will be put up during the next year. There is one horse mill, belonging to a Chickasaw woman, for the purpose of grinding corn, which makes very good meal; and there is now being erected a saw and grist mill, to go by water power, by Mr. R. Guy, a white man, who has married a Chickasaw. Several of the Chickasaws have spinning machines, and are making cloth to clothe their negroes.

There is a Methodist preacher by the name of Moreland, sent by the Arkansas conference to preach to the Chickasaws. He was received well by the Chickasaws, and has been of much benefit to them. Mr. Kingsbury and Mr. Hodgkins, who live not far from Fort Towson, occasionally visit the Chickasaw district to preach to the natives, and their labors have not been lost.

The various tribes of Indians that make their homes north of Red river and south of the False Washita are in the habit of committing depredations upon the Chickasaws, and also upon the northwestern settlements of Texas; but their depredations have not been so frequent upon the Chickasaws this year as formerly; owing, no doubt, to Fort Washita, they are afraid to come into the thickest settlements. Negroes frequently leave this nation, and they are harbored by those tribes for a while, and then they take them among the Camanches and sell them. Some few have been brought back by the Shawnee and Delaware Indians, and the Chickasaws have to pay them from one hundred and fifty to two hundred and fifty dollars for their own negroes. A case of this kind happened about ten days since. The Chickasaw had to pay two hundred and fifty dollars for his negro that was run off by one of those bands of Indians above alluded to. I have but little doubt, that if some one or two of the agents that are stationed in the Southwest were ordered to send out and collect all those tribes at some point west of the Cross Timbers, and give them a friendly talk, it would be the means of putting a stop to their stealing from the Chickasaws and Choctaws.

The Chickasaws as a nation have not, as yet, received an annuity since they emigrated west, and they are at this time very much in want of it, particularly a majority of that class that were passed competent. Should this coming winter be as cold as the last, they must suffer greatly for clothing and blankets; although we are far south, yet, on account of the immense prairies, the cold is very severe.

I was ordered by you to take the census of the Chickasaws this last spring and summer; I made two or three attempts, but failed. At a council, which was held by the Chicksaws in July, Mr. James Gamble and Mr. William Barnett were appointed to take the census, and they have been about six weeks at that business. The rule that the Chickasaws have adopted is to leave out a great number that lived with them in the old nation, and all those who have married amongst them, whose mother is not a Chickasaw—for instance, an Indian may be half Choctaw and half Chickasaw—but if his mother was not a Chickasaw, he is not to be taken in the census, nor is he to draw an annuity. I expect it will be several weeks before the census is completed, and I have my doubts whether then it will be correct; but, so soon as it is done, I will forward it to your office.

With high regard, I have the honor to be your most obedient servant,

A. M. M. UPSHAW,
U. S. Agent for the Chickasaws.

Hon. T. Hartley Crawford,
Commissioner of Indian Affairs.

No. 89.

Cherokee Agency,
Fort Gibson, September 30, 1843.

Sir: In compliance with the regulations of the Department of War, the undersigned submits the following report of the affairs of the Cherokee nation:

For a while, immediately after their removal and settlement beyond the Mississippi, from causes incident to such a state of things, the Cherokees rather diminished than increased in population. They have devoted themselves with more steadiness and industry to the cultivation of the soil, which may be regarded as their national employment, and which affords an easy and abundant subsistence. From this, as well as other causes, their numbers are rapidly increasing. In their houses, farms, and fixtures, they have greatly improved the comforts of life, and show many evidences of a people advanced in civilization. They generally live in double cabins, and have about them the utensils and conveniences of such habitations. Though fond of relaxation and amusement, they are far from being improvident in their habits. This increasing disposition to provide for the future, instead of giving themselves up to the enjoyment of the present, strongly marks a tendency to raise themselves in the scale of moral and intellectual beings. Their national treasure is appropriated and employed in part for the maintenance of government and the support of public education. They give their principal chief $1,000 as an annual salary; and besides this sum, it is usual to make an appropriation to cover his extra expenses. Their judges receive $5 per day while on duty; their committee and council men $2 50 a day while in session, which is about three weeks; and their sheriff receives $200 annually. During the session of their council, a public table is kept, at the expense of the nation at large. There are eleven common schools under the superintendence of the Rev. Stephen Foreman, a native Cherokee, in which are taught reading, writing, arithmetic, book-keeping, English grammar, geography, and history. Nine of the teachers are white men, of whom one is an adopted citizen by marriage, and the other two teachers are native Cherokees. The expenses of these schools are defrayed from the national school fund. There is allowed to each teacher $535, including the purchase of books; also, $200 for the support of orphan children while attending school; and from five to ten orphans are annually supported and educated at each of these schools. The number educated for this year was about five hundred scholars.

Besides the public schools thus noticed, there are several missionary establishments connected with schools and churches. Of these, "the American board of commissioners for foreign missions among the Cherokees" have four stations—Dwight, Fairfield, Park Hill, and Mount Zion; and also a native preacher stationed at Honey Creek. The *Dwight mission*, under the superintendence of the Rev. Jacob Hitchcock, has a school of fifty-five girls; forty-five regular boarding scholars; two teachers regularly employed, (Mr. and Mrs. Dodge.) The *Fairfield mission*, under the care of Dr. E. Butler, has a school for girls and boys, averaging twenty-five; a Sunday school of thirty members. The church consists of seventy-five members, nearly all Cherokees. Park Hill is in charge of the Rev. Samuel A. Worcester. The whole number of scholars has been forty-seven; the average is about twenty; all Cherokees except five. At *Mount Zion*, under the care of the Rev. Daniel S. Butrick, there has been a school as high as fifty—the average number about fifteen. The whole number of church members of this mission, who are natives, is one hundred and ninety-one. The Methodist society have employed in the nation twenty-seven preachers, of whom fifteen are local; of the twelve that have been sent by the society to labor as circuit preachers, four are natives. There are fourteen hundred communicants. There are also Sunday schools in many of the societies, in which instruction is given both in the English and native tongues, reported to be in a prosperous and increasing condition. The missionaries of the "United Brethren's" church have under their care about eighty members, Cherokees, and two schools in charge of the Rev. Mr. Vogler and D. L. Smith, numbering from twenty to thirty scholars; and the other in charge of Messrs. G. Bishop and H. Ruede, numbering from ten to fifteen scholars. The Baptist association have seven hundred and fifty communicants, two ordained preachers, who are also natives, and five licensed preachers, who are also natives; their names are Lewis, Downing, Peter Tu-ne-no-lu, Potts, and T. Soowotsciku. The Cherokee Baptist mission formed themselves into an auxiliary missionary society to the mother board in Boston, and have two schools supported by their joint efforts; one is entirely a school for females, and is taught by Miss Hibbard; the other is under the charge of Miss Moss, and is for the instruction of both boys and girls. Both of these are competent teachers and accomplished ladies. The first has thirty-five and the other forty-five pupils. They have a large brick school house, built by the Cherokees; and, altogether, the schools are answering the most sanguine expectations of their friends.

There is one temperance society, consisting of seventeen hundred and fifty-two members, of which fifteen hundred and sixty are Cherokees. They enter into all engagements with caution, but observe them with good faith; and, in making the pledge to the temperance society, they do so with a full knowledge of its obligation. The following is their pledge: "We hereby solemnly pledge ourselves, that we will never use, nor buy, nor sell, nor give, nor receive, as a *drink*, any whisky, brandy, rum, gin, wine, fermented cider, strong beer, or any kind of intoxicating liquor." The enclosed reports may be referred to, if necessary, for the correctness of the foregoing statement. The Cherokees have a printing press, which has recently gone into operation. It will no doubt have a decided influence on the intelligence and character of the nation, as it will serve to disseminate knowledge and useful information. Publications both in the native and English tongue are issued from it. Their own language is written and printed by means of an alphabet invented by George Guess, a native Cherokee. This remarkable man is destined, by his invention, not only to be identified with the literature of his race, but may be the means, by his love of knowledge and patriotic devotion to the interests of his country, of elevating one of the aboriginal races into historical importance and moral dignity. As a people, the Cherokees generally evince an increasing interest in the importance of education. Some of them have a decided taste for general literature, and may be said to have reached respectable attainments in it. A few have full and well-selected libraries. Thousands of them can speak and write the English language with fluency and comparative accuracy; and as many hundreds can draw up written contracts, deeds, and other instruments, for the transfer of property. In the ordinary transactions of life, especially in making bargains, they are shrewd and intelligent, frequently evincing a degree of craft and combination that strike the mind as remarkable. The Christian religion, which they profess, has had a sensible influence in overcoming their jealousy of the white man, as well as upon their morals generally. Some of their native preachers are eloquent, and distinguished for exemplary piety. In their earnest appeals to the Supreme Ruler of the universe, there is something of sublimity, which is well calculated to touch the heart of the white man, when they say to him, "Your God is my God, and my God is your God; let us worship him as brethren, for he is the God of the universe." Some of these preachers might deserve special notice. It gives the undersigned pleasure to bear testimony to the excellent character of the present superintendent of common schools, the Rev. Stephen Foreman, who is a native Cherokee, and both a teacher and preacher; *he may be truly said to be a good and useful man.* From hints and expressions which I have seen, coming from official sources, and published in the public prints, there seems to be an impression that the Cherokees are more addicted to the use of ardent spirits than their neighbors; and, perhaps, in connexion with this subject, it is proper to notice the following remark, to be found in the annual report of the late worthy and respected Creek agent. After speaking of the orderly habits of the Creeks, and their aversion to spill the blood of the white man, he adds, "Whereas on the opposite of the Arkansas, among the Cherokees, (who boast of their civilization,) murders and riots are of weekly occurrence." It is not the design of the undersigned to speak invidiously of other tribes, compared with the Cherokees. On the contrary, all have excited his interest and sympathy, and it gives him pleasure to bear testimony to the improving character of some of these neighboring tribes, the object being explanation only.

It is known that, on the frontier of the Cherokee nation, there is a military garrison of six companies of United States troops, and not far from the same place reside the Creeks and Seminoles, who cannot well be approached without passing through the Cherokee territory; from these causes, more spirits are sold and consumed in the Cherokee country than among their neighbors; but not so much by themselves as by others. They are no doubt tempted to carry on an illicit trade with the soldiers of the garrison, with whom they find a greater ability to buy their spirits, and equal disposition to indulge in the excessive use of them. I will venture the remark, that ten quarts are consumed at the garrison where one is used among the Cherokees.

The causes alluded to exercise a baneful influence on the habits of the Cherokees, by holding out, both to their avarice and love of drink, a strong temptation.

So far as respects the other topic alluded to, it comes within the knowledge of the undersigned, that, within the last nine months, four capital executions under Cherokee laws and authority have taken place for the murder of white men; and, of that number, three were Creeks and one a Seminole.

There is one source of irritation to the Cherokees which it becomes me to notice, as they have made complaints to me on the subject. They entertain an apprehension that the military officers in the neighborhood are disposed to treat them with arbitrary control, and to interfere with their internal concerns, so as to trespass upon rights sacred by treaty and the great principles of the common law. The Cherokees are a treaty abiding people themselves, and view with abhorrence any wanton violation of national compacts.

They are jealous of foreign interference, and resent any attempt to interfere with their own counsels, which they keep with great wisdom and ever-vigilant circumspection.

To these feelings military men are generally too indifferent. They assume a superiority which is frequently offensive to the pride of the Indian, and treat with levity and aversion what he regards as important, and sacredly associated with his homestead. No doubt, the garrison is, in a military point of view, eligibly situated; and it is far from the design of the undersigned to reflect upon the conduct of the officers; but he is bound to say that, so far as it regards the Indians, the garrison does not have a beneficial influence. On the contrary, they would be better off if the garrison was one hundred miles distant from them.

One of the greatest evils of which the Cherokees have cause to complain, and of which they do complain, is the habit of irresponsible and transient white men intruding themselves upon them. This is a class of people that would be of little value any where, and exercise a mischievous influence on the more unthinking portion of the Indians. On the contrary, useful and laboring mechanics and farmers are of great advantage. There is another class of persons settled among the Cherokees, whose situation deserves to be noticed. As the department is already aware, there are about one thousand or twelve hundred Seminoles and Creeks settled among the Cherokees. They came there without the sanction of the Cherokee authority, and remain by sufferance, and are not likely to become adopted citizens. As aliens, they cannot take a patriotic interest in the prosperity of a country in which they have no recognised caste. It would be better for all parties if they were removed to their own country, where they would feel some interest in identifying themselves with the fortunes of their own people.

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In concluding this report, which is longer, and which it may be thought embraces matters not usual in such papers, the undersigned will advert to one topic of great interest, in a political point of view, to the Cherokee nation. The seventh article of the treaty of 1835 is in these words: "The Cherokee nation having already made great progress in civilization, and deeming it important that every proper and suitable inducement should be offered to their people to improve their condition, as well as to guard and to secure, in the most effectual manner, the rights guarantied to them in this treaty, and with a view to illustrate the liberal and enlightened policy of the Government of the United States towards the Indians, in their removal beyond the territorial limits of the States, it is stipulated that they shall be entitled to a delegate in the House of Representatives of the United States, whenever Congress shall make provision for the same." This provision of the treaty is highly acceptable to the Cherokees, and one which may have operated as an incentive to their intellectual exertions and moral and religious improvement. It compliments their pride and intelligence, and is calculated to attach them to the Constitution and laws of the United States. Their own institutions are entirely german to ours. Their government is founded on republican principles, and modelled after the Constitution of the United States. Justice, under a written code of criminal law, is administered with impartiality and dignity, by upright judges. Their chief justice, Jesse Bushyhead, is a man of piety, decision, and intelligence, and, both as a preacher and magistrate, exercises a salutary influence over the government and morals of the people. Almost in every respect the Cherokees have lost the habits of a barbarous origin, and have fitted themselves for a moral affinity and political association with the civilized race. Whether they occupy such a position now as should render them eligible to avail themselves of the provision of the treaty above quoted, depends entirely on the decision of Congress; which depends very much on the judgment arising from the facts which have been stated, and other information already in the possession of the department. The opinion of the undersigned, formed from an intimate knowledge of the habits and disposition of the people, is favorable to them. The favorable action of Congress, at this time, on this provision of the treaty, would have a most beneficial effect, and might be the means of accelerating the object so much desired by the Government of the United States—that of resquing this people sume a brighter aspect; and I trust the department will extend that patronage towards it which its position relative to other tribes demands.

All which is respectfully submitted.

I remain, very respectfully, your obedient servant,

THOMAS L. JUDGE,
Sub-Agent, Seminole Indians.

Major WILLIAM ARMSTRONG,
Acting Sup't Indian Affairs, S. W. Territory.

I make the following part of my report: that you would lay the subject of stopping the annuity to those in the Cherokee nation in a proper point of view before the department, and make the result known to this agency before the arrival of the annuity, and whether I may be authorized to furnish the number of axes minus.

Yours, &c.

THOMAS L. JUDGE.

Major WILLIAM ARMSTRONG, *&c.*

No. 91.

NEOSHO SUB-AGENCY, *August* 1, 1843.

SIR: In compliance with the regulations of the Indian department requiring agents to make out an annual statement of the condition of the Indians within their respective agencies, I have the honor to make the following report:

I entered upon the administration of the affairs of this agency in the latter part of the month of May last; consequently, I know nothing of my own knowledge of the condition of the Indians or the affairs of the agency prior to that time; but, from all the information I can gather, by frequent inquiries made of individuals who are every way entitled to confidence and respect, and who were also familiar with the affairs of the agency of that period, I think I am warranted in saying that they are decidedly in a more prosperous condition now than they were last year. This statement is more especially true of the Quapaws. A few days before I came among them they had a bacchanalian row, in which one of their very best men was killed; the like scene had taken place a month or two previous, in which another of their men (the United States interpreter) was killed. Such has not been the case since I have been here. I have found them to be, when properly managed, an orderly people. At the last annuity payment I saw none the least intoxicated, which was, as I am told, a very unusual thing with them; nor have I seen a solitary individual of them drunk since I have been in the nation. I understood at the annuity payment, which I made about 3d June last, that there were some two or three men upon the premises who had been in the habit of selling whisky to the Quapaws on a credit, who resided over the lines, and who had come there for the express purpose of making collection of debts before contracted. I instantly talked to the chiefs about the baneful effects of their people using intoxicating drinks, and concluded by saying to all, without distinction, that while it afforded me pleasure to see them pay their honest and just debts, yet I hoped and requested them not to pay a cent of any debt which had been contracted for whisky, for in fact a debt so contracted by them could not be an honest one, because the law had forbidden the article being sold them. I adopted that course for the purpose, if possible, of breaking up the scandalous and injurious practice which had been carried on by men living over the line, and consequently not within the reach of an agent, by men who had made it their business to sell the Indians whisky on a credit, if they had no money, with the expectation of getting their pay at the annuity payment. It had much of the desired effect; the whisky sellers made no collections, and I have since learned that the most of them, finding that the stand I had taken against them would subject them to the loss of all they sold upon a credit, have discontinued that unlawful and abominable traffic; and it is principally owing to this that they are so much more temperate now than formerly. The Quapaws have also advanced in farming operations; their farmer, who is a very worthy man, and who is of infinite service to them, informs me that they have more land in cultivation this than the last year, and that they will make more corn and pumpkins. They have raised no wheat or oats as yet, but they raise a great quantity of beans and some garden vegetables.

Immediately on the banks of the Neosho river is a bank of bituminous coal of the best quality, easily obtained, and apparently inexhaustible. Some five or six miles to the northeast of this bank, situated in the midst of a very extensive prairie, is a mound of from 800 to 1,000 feet high, and about one mile long, on which I discovered coal of good quality, iron ore, &c.; between this mound and the coal bank on the river are several singular springs, among which is one of a remarkable character—it is a tar or pitch spring. The water, which is sulphur and tar, flows out of the same bank, and seems to be amalgamated until it gets into the pool, when the tar separates itself from the water, rises, and forms into a thick mass upon the surface. I understand it has been made use of in many instances, and that it answers as an excellent substitute for tar.

The mixed band of Senecas and Shawnees has never been, as I am told, very intemperate; there are some among them who drink, but it is not so openly done as it is by their neighbors. I have seen but few of them drunk; and it is with pleasure I say, that two or three of their chiefs opposed the use of spirits. According to the best information I can get, they drink less this year than they did the last, and that they work more upon their little farms. They may be considered, to some extent, an agricultural people. They will raise this year, I think, if it is taken care of, a sufficient quantity of grain to carry them through the next. One man among them will make at least 1,800 bushels of corn, besides oats, potatoes, and various kinds of garden vegetables.

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The Senecas of Sandusky, as they are known in the treaty, or Cowskin Senecas as they are called here, from the fact, I suppose, of their being located on the Cowskin river, are more intemperate than either of the other tribes of this agency. The cause of this is evidently owing to the fact that there are, at this very time, two distilleries in full operation in the State of Missouri, situated within a mile of the southeastern border, one of which, I understand, turns off every week *one hundred barrels of whisky*. The Seneca mills are erected below, upon the same creek with one of these distilleries; and the Indians, in going to their mills, would fre-

quently go to these sinks of corruption, depravity, and vice, and get drunk before they returned home. They had a ready facility of procuring whisky, for I have been told that they could get it in exchange for corn; and as they were entitled to the toll of their mill, some of them would take their proportion, which was much needed by their families at home, and barter it for whisky. The regulations of the mills are now such that they are forced to abandon that practice entirely, which has aided greatly the advancement of temperance and sobriety among them. The distilleries to which I allude are located on public lands; but, as they are within the jurisdiction of a State, they claim to be out of my reach; surely it was never intended that the public domain should be prostituted to so unholy a purpose. The Senecas, notwithstanding the inducements held out to them by these convenient places of drunkenness to satisfy their propensity for drinking whisky, make use of much less this than the last year. Upon the whole, they, too, are rapidly improving; some of them are sober, moral, and excellent men. Such is strictly true of their two head chiefs, (George Curley Eye, and Small Cloud Specie,) whose assistance to me in preventing the introduction of spirits among their people is of great value. They have also improved in farming; they are raising more grain than formerly; they will raise a sufficient supply this year for consumption the next; many will raise corn to sell, whilst others not enough to serve them. They raise corn, wheat, oats, and vegetables of almost every variety; some few of them have flourishing young peach orchards. One man among them will raise this year two thousand bushels of corn, besides wheat, oats, &c. * * * * *
I am of the opinion that the lands owned by these three tribes of Indians, (Senecas, Senecas and Shawnees, and Quapaws,) are as valuable as any, in their original state, I have ever met with. The climate is good and healthy, the water is superior, the lands are as rich as they can well be, with an ample supply of timber for building, fencing, and fire wood, and at the same time high and rolling, affording grazing grounds for immense herds of cattle.

The country is also possessed of three fine large rivers—the Cowskin, which is about two hundred feet wide; the Neosho, about three hundred and fifty feet; and the Pomme de Terre, two hundred and seventy-five feet wide. The rivers can be navigated the greater part of the year by flat-bottomed boats. The Indians of all those tribes are healthy, well satisfied with their country, and seem to be fast approaching to contentment and happiness; and would, if let alone by unprincipled white men, who are incessantly intriguing with them, and frequently against the agent, for their own individual benefit, or to ingratiate themselves into the favor of the Indians, with the hope that by so doing they or their friends might get some one of the situations in the country, supported by the Government under treaty stipulations, give the agent or the Government but little trouble, and would advance in the blessings of civilization much more rapidly.

All three tribes stand well affected to each other, as well as to all other tribes in their neighborhood, and at present towards the white people living on the frontier. They also stand in the most friendly relations towards the Government of the United States, notwithstanding the grand council, which has been recently holden in the Cherokee nation, to which they were invited, and accordingly attended, the object of which, I am of opinion, few of the whites are acquainted with, and the propriety of which *many* must question. Accompanying this will be found my report of the wishes of the Indians upon the subject of schools.

All of which are most respectfully submitted.

I have the honor to be, most respectfully, sir, your very obedient servant,
B. B. R. BARKER, *N. S. A.*

Major William Armstrong,
Acting Superintendent W. T., Choctaw Agency.

No. 92.

Creek Agency, *September* 5, 1843.

Sir: In compliance with the department regulations, the following report, exhibiting a general view of the moral and social condition of the Creek nation of Indians for the current year, is respectfully submitted:

The relations existing between the Creek chiefs and their people, and between the Creek nation and those bordering on their country, continue to be friendly and harmonious. Their pacific disposition towards the Government and people of the United States is also very decidedly evinced on every occasion calculated to induce a manifestation of their feelings. There is a growing inclination among the people of this nation to adopt and conform to the manners and customs of the whites, and to profit by the superior social and political advantages we enjoy, so far as they can perceive and apply them to their present condition. The chiefs of the Creeks seem disposed to receive all the light they can on every point which can tend to improve the condition and advance the interests of their nation; and as so much power resides in the chiefs, every thing is to be hoped from the exercise of their authority, influence, and example, in encouraging what is good and repressing what is bad, so that the march of their people in the road of civilization may be hastened and facilitated. For many years past, there has been a decided opposition on the part of the chiefs to ministers of the gospel and missionaries, to public religious observances, and, I may add, to education. They were rigidly excluded from the nation—a necessary consequence of which was, an increased degree of idleness, licentiousness, and immorality, measurably checked by the moral and religious tendencies of a very small portion of the nation, chiefly through the agency of negro preachers. A very decided change has taken place in the nation in the last twelve months, as respects the habits of the people generally, and the disposition of the chiefs. There is a growing desire for moral and religious instruction, and a stronger interest manifested for the education of children, which, if properly encouraged, must be productive of very decided benefit.

On my first arrival among the Creeks, I very soon perceived that the great barrier to their advancement was this deep-rooted prejudice to education generally, and especially to moral and religious culture, and I immediately commenced my efforts to place the subject in a proper light before them. I soon perceived that religious ceremonies performed by ignorant negroes failed to command their respect as a mass, and suggested to the chiefs the propriety of discountenancing the exercise of religious rites by negroes, excepting among those of their own color; represented to them that it was due to the sanctity of the subject of religion that it should not be intrusted entirely to ignorant persons, and could never be rendered properly respected or diffused among their people; urging upon them, at the same time, the propriety of encouraging among them the efforts of regular ministers and other teachers, as the means most surely calculated to give them the most powerful impulse towards civilization, and promote industry, happiness, and proper ideas and opinions, among their people. These efforts have not been entirely unsuccessful. There is no longer the same decided opposition to the subjects referred to, and I do not doubt that the lapse of a very short time is destined to produce a very marked change on the face of things in this nation, as respects the moral and intellectual advancement of the people, if the means to employ the proper agents are placed at my disposal, to wit: competent head teachers of the principal schools, who have regularly qualified for the ministry.

We have received within the current year a missionary establishment of two families, under the patronage of the Presbyterian missionary board, of which the Rev. Mr. Loughridge is principal, and the Rev. Mr. McKinzey assistant. They have the confidence of the chiefs, and will be instrumental in doing immense good to the nation whenever their arrangements are complete for commencing their operations. They have located between the Arkansas and Verdigris rivers, about 20 miles west of this agency, or 26 west of Fort Gibson.

At the next general council the head chief of the Creeks, General McIntosh, will propose that all white men in the nation having Indian families shall become regular citizens of the nation, by marrying their wives agreeably to the Creek law, and being admitted to citizenship in form by the Creek council; and all others shall obtain permits to remain from the agent, to do which it will be necessary that evidences of good moral character shall be exhibited, with guarantees for future good conduct; thus protecting the Indian from the effects of bad examples in white residents. There exists among some of the chiefs a desire to remodel the form of their government, so as to throw off a useless and expensive body of "law makers," as they are called, nominal public functionaries, who render no service, but exist at an expense of $10,000 to the nation—a sum the chiefs propose to distribute this year to the heads of poor families.

The law requiring all whisky found in the nation to be spilled, will also receive attention at the general council on the 15th of the current month, and will be revived with additional rigor.

Much will be effected by it, but there exists the most powerful auxiliary in the means of preventing its introduction in the nation in the military force on this frontier; and I have no doubt that if the measure recommended by me to the notice of the department, under date of the 10th of July last, was carried out, it would result in the capture of at least two hundred barrels of whisky, which now finds its way every year into the Indian country.

It can only be done by commands frequently sent along the whisky road and other roads, leading from Van Buren and Fort Smith to Webber's falls, and down the Arkansas from Fort Gibson to Fort Smith, at seasons of low water. The past season has been one of great fecundity in the Creek settlements on Arkansas and Verdigris rivers, though the season was unfavorable.

In the Canadian settlements the crops have suffered much for rain, but they will make a sufficient supply for their wants. The Creeks are great corn growers, if not very neat farmers. They have a field in the Big Canadian bottom about eight miles long by three miles wide, which is a solid mass of growing corn, and worked by several of the towns in common. They also raise immense quantities of sweet potatoes, beans, peas, melons, peaches, &c., besides rice and cotton. I advised them to try the latter staple this season, with the view of inducing them to raise enough to clothe each family, in part, in course of time, and imported for them one hundred bushels of seed.

The spring being late and cold, the yield was less than was anticipated, but a beginning was made in this advantageous culture. Many of the Creeks are large stock raisers, and nearly every family raises a few hogs. To afford them the means of spinning their cotton, I directed their wheelwright to work for about half his time at spinning wheels, by which they have received much advantage. As the nation is well supplied with axes, the chiefs seem inclined to use about one-half of their $2,000 farming utensil fund in the purchase of plough moulds, and whip saws and hoes with the remaining half. Owing to prejudices and impressions excited in the minds of the chiefs by certain persons in this quarter, I have had some difficulty in completing the *census* of the Creeks, but I think I shall be enabled to perfect it with some degree of accuracy at the general council in time to reach Washington by the meeting of Congress. I have stated above all that I deem essential to give you a general view of the state and condition of the Creek people, to enable you to present it to the department for the information of the Government, leaving you to make such additions and suggestions as your judgment may deem necessary and proper. Accompanying this report will be found the school reports, names of persons employed in service of the United States, names of licensed traders, and annual estimate of funds, with returns of agency house, &c.

All of which is respectfully submitted.

With respect, sir, your obedient servant,
J. L. DAWSON, *Creek Agent.*

Capt. William Armstrong,
Acting Superintendent W. T., Choctaw Agency.

No. 93.

Office Indian Affairs,
Detroit, October 13, 1843.

Sir: In submitting my annual report of the affairs of this superintendency, it gives me sincere pleasure to be able to state, that most of the adult Indians within its limits are not only making commendable and gratifying progress in improving their own condition, but evince great anxiety to have their children educated and trained up in the arts of civilized life. They are generally becoming aware that their total extinction is inevitable, unless they conform their habits to those of the whites. The Ottowas of Arbre Croche and Grand Traverse, and part of the Chippewas, have this season urged me most strenuously to use such means in their behalf as may be most likely to induce the President and Congress to receive them as citizens into our great republican family; and I sincerely hope you will endeavor to cause their desire to be taken into favorable consideration, for many of them are *highly* deserving, and a number are, in anticipation, saving their annuity money to purchase farms on the lands they now occupy *at will only*. The vice of intemperance is rapidly decreasing among these Indians. I was highly gratified with their strict abstinence, both at Mackinac and Sault Ste. Marie, during the last payments, and I cannot too highly commend our citizens at both these places for their honorable and efficient co-operation in abating the nefarious traffic in ardent spirits. The confidence and attachment of these Indians to the Government are becoming more firmly settled. About thirty of those who made their escape to the British side of Lake Huron, some three years since, from fear of being forced to emigrate to the west of the Missouri, returned this summer to Mackinac, expressing regret for their folly in having yielded to childish fears and bad counsel. Eighteen more have within the last week crossed from the Canada side, near this place, and are returning to their friends on Grand river. It will no doubt be gratifying to the department to learn that the officers of the British Indian department in Canada have this season announced to such of our Indians as visited their posts, that hereafter they can give no presents to Indians residing within the limits of the United States. This act of justice and good neighborhood (too long delayed,) will strongly tend to allay the jealousy and unkind feelings which have for years existed upon the borders of both countries, and were in a great measure engendered by this very interference with our Indians.

During the payments, both at Mackinac and the Sault, I exhausted every argument and other proper means I could devise in order to induce the Indians hereafter to receive goods in lieu of specie, but in vain. Some urged their desire to lay by money to purchase lands; others, that the Government never furnished the right kind of goods; that an attempt was made to cheat them in 1837, &c.; others, that eight to nine dollars each was not enough to get a supply of goods with, and that they now buy them very cheap from the merchants; others insisted that they would not allow *any* change in the terms of the treaty, for fear of future and more serious encroachments; in short, it would be tedious and useless to enumerate all the *pros and cons* we had upon the subject; and I am persuaded that while the interest of the traders is so deeply involved, we need never hope to effect either this or many other desirable objects, unless Congress can be prevailed upon to alter our present imperfect and impotent system of Indian laws, so as to bring both traders and Indians more under the influence and control of the Government.

Herewith I enclose report of the sub-agent at Sault Ste. Marie, and the following missionary and school reports, viz: No. 1, Rev. William H. Brockway, Methodist missionary at Sault Ste. Marie and Ance Quinenon; No. 2, Rev. A. Bingham, Baptist missionary at Sault Ste. Marie; No. 3, Rev. T. Santelliz, Roman Catholic missionary at Mackinac, &c.; No. 4, Rev. F. Pierz, Roman Catholic mission at Arbre Croche, &c.; No. 5, Right Rev. Bishop Lefevre, embracing Michigan and part of Wisconsin; No. 6, Rev. P. Dougherty, Presbyterian mission, Grand Traverse bay; No. 7, Rev. George Smith, Congregational missions, Old Wing colony; No. 8, Rev. J. Selkrig, Episcopal mission, Griswold colony; No. 9, Rev. L. Slater, Baptist mission, Ottowa colony; and No. 10, Rev. S. Hall, Lapointe. These documents will disclose to you something of the labors and success, as well as self-denial and discouragement, of these devoted missionaries and teachers. Their sensitive modesty shrinks from entering into details of their trials and labors, and all that I feel at liberty to introduce within the compass of this report is to state that our whole nation, and indeed the cause of humanity, is under a deep and lasting debt of gratitude to these self-sacrificing men, by whose arduous and persevering toils we now have conclusive evidence that the condition of the red man is not hopeless, (as some of our philanthropists, and many of our ablest statesmen, have heretofore supposed.) My heart has been truly cheered, both in seeing and learning the extensive and happy changes which the efforts of the last few. years have produced. At Ance Quinenon, on Lake Superior, about two hundred miles above Sault Ste. Marie, more than half the band have embraced Christianity, live under an excellent code of laws of their own devising, have a very successful methodist mission and schools, and with the aid and moral influence of the mechanics and farmers lately sent them by the Government we may expect a rapidly increasing improvement, not only amongst them, but also in the bands around them. At and near the Sault Ste. Marie, both the Baptist and Methodist missions and schools have done much good. At the Methodist mission there is considerable improvement going on, both in farming and building, by the Indians. The carpenter from Grand Traverse bay was sent to aid them during the past season, with which they appeared to be much gratified. Many of the youths raised in these schools have turned out well, are exceedingly useful as interpreters, assistant teachers, &c. The Catholic mission at Arbre Croche has done much in improving the condition of the noble Ottowa bands in that vicinity; a great majority of them have become temperate and industrious, and are earnestly desiring that their children be thoroughly educated. The Presbyterian mission at Grand Traverse has been instrumental in bringing about a great work of reform in that region. Many good houses and farms are in progress, and little or no liquor has been used among them during the past year; their school is well attended and thriving; about twenty (and some of them among the principal men) have been to all appearance devoted and consistent Christians. The Congregational mission under Rev. Mr. Smith, at Old Wing colony, (near Allegas,) has for the last two years been in a perplexed and struggling condition, for want of pecuniary support; but as the department has lately sent a farmer, and as you purpose giving it aid from the school and mission fund, we may hope for a speedy revival of its energies and usefulness. Mr. Smith is an excellent devoted man, and the farmer, Dr. Goodrich, will render most essential aid in all efforts to do good; the Indians are Ottowas, and much disposed to improve their condition. I trust they will not be forgotten in the distribution of the school and mission funds, as mentioned in my reports of 10th May last.

The Episcopal mission at the Griswold colony has done much good during the present year. A number have joined the church, and have become industrious, temperate, and economical; they are improving rapidly in agricultural pursuits, and evince great anxiety to have their children educated and brought up like the whites.

The Baptist mission, under the Rev. Mr. Slater, at Ottowa colony, and but fifteen miles from the Episcopal mission, has been in progress for the last six or seven years, although its number is but small; it has been productive of much good, and has been the means of inciting several other bands to ask for schools and missionaries. I am in hopes that some of the Pottawatomies who rove about in that vicinity may be induced to attach themselves to these two colonies, for many of them have lately formed themselves into a temperance society, and seem bent on improvement. The Swan Creek and Black River Methodist mission, near this place, has submitted no report, as they are not in any respect participants in the bounty of the Government. I trust that you will allow this school $200 or $300 out of the civilization fund, if at all consistent; for they have effected a wonderful work in this little band. Nearly all have made a profession of religion, have abandoned their former savage habits, and are becoming extremely exemplary in every respect; they have purchased a small tract of land, in the hope of making themselves comfortable, and trust to be received ere long as American citizens; and I assure you that we have many who are much less worthy. The docility and late improvements of some of the bands in this northwestern region exceed all former hope or expectation of their best friends. I would not, however, have it understood as my intention to induce the belief that this cheering picture has not its dark sides also. Yes, sir, there are numerous impediments in the way of a speedy and thorough reformation, and a few of the bands seem recklessly bent on pursuing the road to ruin. Yet I am fully persuaded that if our country will do its duty, many of the tribes may be saved. The evil most serious and difficult to be overcome is the passion of a portion of them for liquor, and the fiendlike rapacity of many of our people on the frontier, in vending it; yet, from late experience, we need not despair of eventually overcoming even this giant enemy.

Herewith are submitted also reports and abstracts of work done by the mechanics and farmers within this superintendency, which will no doubt satisfy you that they both discharge their duty faithfully, and are held to strict accountability. There are but very few instances in which I have had the least cause of dissatisfaction in this branch of the public service; and additions have lately been made of such men as will, in my opinion, greatly tend to elevate the moral tone and influence of their respective stations. It is of high importance that this class of men employed among the Indians should not only be capable and faithful in their immediate vocations, but agree in *principle* and views with the missionaries and school teachers; else divisions and other evils will be apt to arise among them, which must greatly impair their usefulness. The incentive given to the bands at and near the several Government stations, to build comfortable houses, get stock, and improve their farms, &c., is pleasing and highly encouraging. Some have even procured good furniture, and eat at table like the whites.

Mr. Hulbert, the sub-agent at Saganaw, has just arrived from Lapointe, on Lake Superior, where the payments have been satisfactorily made, *without the least disturbance or trouble.* The Indians of that country continue to give pleasing evidence of their desire to improve their condition and educate their children; a strong reinforcement of missionaries have gone thither the present summer, and from their reputation we may hope much will speedily be done to improve and elevate the character of the natives of that whole region. The Saganaw sub-agent, having just returned from Lake Superior, will not be able to submit any regular report before this communication must be transmitted, but I have favorable information from his station. The Indians drink far less than they have been in the habit of doing; they have generally enlarged their fields, and their crops are abundant. His plan of giving each chief the care of a pair of oxen and some farming implements, &c., has created great emulation among them, which will no doubt result favorably. The farmer and blacksmith are both faithful men in their vocations. It is very desirable to have a couple of schools among them. Will you be pleased to estimate *for their own* $1,000 *for that purpose?* Without schools and missionaries, all our efforts will come short of accomplishing the desired end.

I am, respectfully, sir, your obedient servant,

ROBERT STUART,
Acting Superintendent of Indian Affairs.

Hon. T. HARTLEY CRAWFORD,
Commissioner of Indian Affairs.

No. 94.

SAULT STE. MARIE, MICHIGAN,
September 7, 1843.

SIR: The Indians of this sub-agency, amounting to about 900, and occupying the country from the northeastern point of the northern peninsula of Michigan to Montreal river, forming Chippewa county, are employed in the chase, and draw a part of their subsistence from the lakes by fishing.

The maple sugar of last season was less than is usually obtained by them at the Ance and Grand island.

The yield of potatoes from their clearings did not suffice them for the winter. Those of the Sault bands who planted last spring say that their potatoes promise well, the monthly frosts of spring and summer not affecting them in the woods or sugar camps where they plant. More furs have been sold by the Indians to the traders this season than in the previous one; many of them have paid their debts with the proceeds of their hunts and treaty money; and they evince greater satisfaction and contentment than I have before observed at the Sault.

At the Ance Gurwewenon, where about three hundred usually pass the winter, and where fish are abundant, they have been subject to much sickness. Their chief died in the latter part of February, and about sixteen others during the year, mostly adults.

These Indians manifest a great desire to better their condition, are docile, and of sober habits, with few exceptions.

The Grand Island Indians were less subject to sickness, and few cases of want were to be found amongst them.

This year the Indians of the upper lakes did not visit the Sault. None passed by this route to the British present ground at the Manitoolines. I learn that no presents are in future to be made to Indians who do not live in Canada. Those who were from this place at the Manitoolines were so informed, they say, by the principal officer, at the time of giving out the presents.

Of the schools, of which there are three in this sub-agency, viz: near the village of the Sault Ste. Marie, conducted by the Rev. Abel Bingham, reported in Nos. 9, 10, and 11; at the Little rapids, under Rev. W. H. Brockway; (the reports by these gentlemen are given in Nos. —;) and a school at the Ance, under Rev. G. W. Brown, reported by Mr. Brockway in No. 8. In these schools the children make encouraging improvement, and every attention is bestowed to their health and comfort. They are well fed and clothed, and show great attachment to their teachers.

The farmer, blacksmith, and his assistant, left the Sault for the Ance Gurwewenon on the 4th, and the carpenter on the 21st August. The farmer has been furnished with a yoke of oxen and several farming implements, with which to commence his labors. He has been instructed to carry on his operations on a lot adjoining the mission, which affords greater facilities for farming than any other spot in the vicinity of the mission establishment; a river, on which a mill may be erected, passes through it, within a short distance from the bay by which the lot is bounded on the west.

The carpenter, Mr. Campbell, has been at work for the Indians at the Little rapids from the 5th July. His report is herewith.

The foregoing is most respectfully submitted.

Very respectfully, your most obedient servant,

JAMES ORD.

Robert Stuart, Esq.,
Act'g Superintendent Ind. Affairs, Detroit, Mich.

No. 95.

Old Wing, *September* 30, 1843.

Sir: Agreeably to your instructions, I make the following report for the quarter ending this day:

During the greater part of this quarter most of the Indians have been absent. Some five or six families have remained through the summer, encamped about three miles from their farms. Within a week or two, a number of families have moved on to their farms, and are now engaged in harvesting their corn and potato crops, which are very good for this season. They have some fifty acres of corn and potatoes. One very comfortable log house is nearly ready for occupation, and one other dwelling is in a state of forwardness. In consequence of the shyness of the Indians for some time, I have labored under great disadvantage in securing hay for the public oxen, &c. I have done the haying without the assistance of the Indians. Within a short time, the Indians have come forward very pleasantly, and seemed inclined to do something on their farms. They, however, say they intend to live on the shore of Black lake, some four miles from the school house and Mr. Smith's.

This living so far from the farms I think very much to their disadvantage, and I hope that they may be induced to settle permanently on their farms. To effect this, I think a visit from the superintendent necessary; and I trust you will visit the colony this fall, as very much good may be done by so doing. The public property is the same as first reported.

I am, sir, respectfully, your obedient servant,

OSMAN D. GOODRICH.

Robert Stuart, Esq.,
Acting Superintendent Indian Affairs.

No. 96.

Grand Traverse, *June* 30, 1843.

Sir: The time has again arrived for me to report the doings of the farming department at this place for the second quarter of 1843.

The assistant farmer, David McGulpin, was sick from April 1st to the 22d, and did no work. The Indians at the time were making sugar. I worked in the mean time, hauling large troughs for the Indians to put their sap in, and hauled stone to make a lime kiln, and also made a door, yard fence, and gate, to the house which I occupy. April 24th to 29th, moved seven families from their sugar camp. May 1st to 6th, ploughed three days for Indians, and helped raise the church; cold and stormy every day.

From this time to June 17th, we were engaged all the time in ploughing, harrowing, sowing, and clearing land. We ploughed about 25 pieces for the Indians; I think about 12 acres. I have ploughed and sowed oats for five families, and found seed besides. I have sowed three acres for our own use, planted one acre in corn and wheat, half an acre in potatoes; have hauled and helped them to build 80 rods of rail fence, and have hauled 72 logs for them to build their houses. I have helped shingle the church, and of late have helped build a lime kiln, and hauled stone for lime.

The Indians have been very industrious this spring; have planted more than ever before, and are now clearing land for another year. The season is backward, but it has been fine growing weather of late.

Your obedient servant,

JOSEPH DAME.

Robert Stuart, Esq., *Sup. Ind. Affairs.*

No. 97.

Extract from a report of his Excellency Governor J. D. Doty to the Commissioner of Indian Affairs, dated Wisconsin Superintendency, Madison, September 30, 1843.

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The annual reports from the sub-agents, farmers, and smiths, are herewith submitted. In compliance with the instructions requiring an annual report to be made from this office of the condition of the Indians within this superintendency, I have the honor to remark that no change has, to my knowledge, occurred within the year, of much importance to them or to the Government. The reports from the teachers of the several schools, which are herewith transmitted, show that there are many children taught, and that the efforts to educate them are attended with reasonable success.

The ruinous effects of the sale of ardent spirits upon the Indians, and the impossibility of agents preventing its use at the annuity payments, induce me to suggest a revision of the laws on this subject, and the additional provision that spirits shall not be given, sold, or bartered to Indians *within either of the Territories of the United States.*

Waynekunah, the place of payment for the Menomonies, is divided only by Pauwaggan river from land which is owned by citizens.

The provisions of the intercourse act, therefore, afford little or no restraint over those who engage in this traffic, many of whom are not citizens of the Territory, and no adequate protection is afforded to the officers of the Government. It should be destroyed, whether found in the possession of a white man or an Indian.

If it is determined that the Menomonies shall remain in the possession of the country now owned by them, and that no further effort shall be made to remove them west of the Mississippi, it is important to them, to the interests of the Government, and to the white inhabitants, that they should be required to leave the lands which have been ceded to the United States, and confine themselves to their own boundaries. If this was effected, depredations would cease, the settlements be at peace, the lands of the United States sold and occupied, and the Indians placed in a situation where the large sums which are expended for their improvement would be permanently useful to them. I would therefore recommend that a place be selected in their country, between Pauwaggan and Wisconsin rivers, as a site for the sub-agency and one of their smith shops, and also for their schools; and that a portion of the fund invested for their use, the interest upon seventy-six thousand dollars since the year 1836, be expended at that place in teaching them agriculture and the mechanic arts. They now receive annually, under a treaty stipulation, five hundred dollars, for farming utensils, cattle, &c., which by such arrangement would become of great service to them.

Having lately attended the annuity payment at Waynekunah, I am satisfied, from what occurred then, that, both for the security of the Indians and the agents of Government, some other place in the interior of their country, where the intercourse act can have full effect, should be selected for the payments hereafter. Fifty to one hundred barrels of whisky were within two hundred yards of the Indian camp many days; and if the Indians had obtained the possession of it, no military force in the Territory could have prevented the most dreadful consequences. The fair trader is overpowered by those who come armed with this weapon; and the law, under the construction which is given to it by the judges of the United States courts and the department, is powerless to restrain its use or to wrest it from them. The instances to which I allude are, first, where spirits are sold to Indians on the border of the Indian country, and immediately taken across the line; and, second, where it is introduced by a white man into the Indian country *with the avowed intention* to carry it to some place beyond, to which the Indian title has been extinguished.

At the close of the last session of Congress, an act was passed to enable the Stockbridge Indians within this Territory to divide their lands, and to become citizens. About one-half of the tribe have availed themselves of its provisions, whilst the residue, nearly or quite equal in number, protested against its execution, with a view to continuing in their Indian state.

The feelings of the parties have become so highly excited that it is presumed to be impossible for them to dwell together; and the "Indian party" have repeatedly expressed their determination to abandon their lands, and remove west of the Missouri. Their request to sell to the United States, and their determination to remove whether they do or do not sell, I have communicated to the department, and have twice visited their settlement, in the hope that they could be reconciled to their brethren and to the provisions of the law. These efforts have been unsuccessful.

As they remain fixed in their purpose, I would respectfully suggest the propriety of asking Congress to pass an act to exempt all from the operation of that provision which declares them to be citizens of the United States, who shall, within one year, make known to the superintendent of the Territory their determination not to become citizens.

And, as this party also desires to sell their interest in the lands they now occupy to the United States, I would respectfully recommend that provision be also made for the extinguishment of their title and their removal.

* * * * * * *

As they propose to provide themselves with a home among the Delawares, if the United States has not set apart a tract for this tribe, the sum of fifteen thousand dollars will, I presume, be adeqate for all these objects. They will cede, I am informed, about seventeen thousand acres of land, upon a part of which there are valuable improvements.

Those who have become citizens are much pleased with the change; and there is no doubt that it will have as happy an effect upon them individually as it has had upon the Brotherton people, who are now advancing rapidly in all the arts of civilized life. For good husbandry, to the extent which they cultivate, they are not surpassed by any settlement in Wisconsin.

There can no longer be any doubt, I think, that a permanent provision of this kind, offering separate estates, and the privilege of citizenship, to all who may choose to accept of them, would be of the greatest advantage to the Indian race.

No. 98.

GREEN BAY INDIAN SUB-AGENCY,
September 23, 1843.

SIR: Agreeably to the requirements of the standing regulations of the department, and of recent instructions, I have the honor, herewith, to submit a concise report of the condition of the affairs of this sub-agency, and of the Indians embraced therein. Want of time to devote to the subject, occasioned by unexpected accumulations of duties, (in the payment of annuities, &c.,) prevents my giving as full a report as I could wish.

If, as I believe it has, the late act of Congress, conferring upon the Stockbridge Indians the rights of citizenship, has been carried into effect, the only tribes remaining under my charge are the Menomonie tribe and the Oneida tribe. The first of these in importance, as to numerical strength and intercourse with the Government, is the first mentioned. At the enumeration made in September, 1842, the Menomonies numbered two thousand four hundred and sixty-four souls, and I believe will vary but little from that at the present time. About one-half of the tribe reside in their own country, (which, as far as my knowledge on the subject extends, is bounded as follows: on the southwest by the Wisconsin river, on the northeast by the Wolf river, on the southeast by the Fox river, and on the northwest by the country of the Chippewas of Lake Superior,) and the balance on lands ceded by them to the United States. A band of from four to five hundred men, under a chief called Little Wave, are scattered about on the eastern shore of Lake Winnebago and the adjacent country. Another band resides contiguous to the Bay settlement, at the head of Green bay; and the Oconto, the Penshetogo, and the Menomonie bands, reside distinctively on the shores of the rivers bearing the same names, which empty themselves into Green bay, on the west side thereof. In accordance with instructions from the department, I assembled the chiefs of these bands, and informed them that the President desired their immediate removal to their own country. They answered me, that it was impossible for their young men to remove their canoes and wives and children in the depth of winter the distance of a hundred miles, but that they would comply with the requirements of their "GREAT FATHER" so soon as the rivers would open in the spring, to admit the passage of their canoes. I communicated this fact to the department, and, since then, have neither heard from the Indians nor the department on the subject.

The whole tribe is of an erratic and roving disposition, gaining a precarious subsistence from the chase and trapping and fishing. A portion of their own country is arable land, and exceedingly rich and fertile, abounding in wild game of almost every description found in a northern latitude, and producing rich furs and peltries in great abundance. The land bordering upon the rivers and lakes is heavily timbered with sugar maple, hickory, oak, ash, beach, walnut, wild cherry, pine, and other kinds of timber, while the streams generally afford the best of water power.

The interior of the country is well watered, and beautifully diversified with woodland and prairie, in gentle and uniform undulations of hill and dale, and well adapted for all purposes of agriculture and the raising of stock. The margins of the rivers and lakes abound in wild rice. This the Indians gather in the month of September, and deposite in the ground, to be taken therefrom, and used, during the winter, as their necessities require. In times of scarcity of game, they subsist entirely upon it; and, when prepared by them with maple sugar, it is a very palatable and nutricious food, answering them instead of bread stuffs. It grows very luxuriantly on the marshy and alluvial bottoms. The grain, when gathered, possesses very nearly the same properties as the cultivated rice of the southern climates.

This tract of country, with its many advantages in fertility of soil, valuable pine forests, and fine water power, bounded as it is by three large rivers partially navigable for steam vessels, and being directly on the natural route of communication between the great lakes and the Mississippi, is destined to become one of the finest agricultural and manufacturing portions of the West, should the Government, in its wisdom, think proper to extinguish the Indian title thereto. Notwithstanding the attempts made to civilize the Menomonies, they still retain their primitive habits and customs—living in lodges made of mats or the bark of trees, and depending upon the chase, fishing, and boiled rice, for support. They consider labor degrading, and all performed among them is done by the females. While in their own country, and kept from too free intercourse with the whites, they are brave, generous, and hospitable; but where they are within the reach of whisky dealers, their unconquerable fondness for this bane of the red man's existence leads them to the greatest excesses, and they are consequently debased to the lowest depths of degradation. This rioting and debauchery exhibits itself in the most indecent and ungovernable form during the payments of annuities, which are now made at Wah-na-kun-ah, on the Wolf river, separated only by that stream from lands owned by individuals, thereby rendering all efforts to enforce the intercourse laws nugatory, as these dealers in the poisonous "fire-water" can carry on their illicit traffic within a stone's throw of the pay ground with impunity. I would therefore respectfully recommend that the payment be made hereafter at some suitable point, ten or fifteen miles in the interior of the country, where the intercourse laws can strictly be enforced.

The only land cultivated by this tribe is small patches dug up with the hoe by the women, for raising corn, pumpkins, and beans. The crops this year are very good. The wild rice has also yielded very abundantly. In the spring of the year, they make large quantities of maple sugar, which they sell to the traders. Their success during the preceding year in hunting and trapping was unusually good. The value of the furs disposed of would, I think, exceed forty thousand dollars.

Under the unremitting labors of the Catholic missionaries, the Menomonies have felt the benign influence of the Christian religion. Many of them have embraced Christianity within the last year, and its salutary effect is apparent in the improvement of their deportment, and in the cleanliness of their persons and wearing apparel. A missionary and school have been established for nearly ten years at the *Petite Chute*, on the Fox river, exclusively for their benefit, under the superintendence of the Rev. T. T. Vandenbrock. A report of the operations of this institution for the last year I send herewith. Mr. Vandenbrock is untiring in his efforts to improve the condition of these Indians. He acts in the capacity of physician (distributing annually amongst them large quantities of medicines) and teacher and general instructer, for which he is very poorly compensated. I forwarded a copy of the circular from the War Department, in relation to schools, of the 25th July, 1843, to each of the teachers within this sub-agency, with a request for them to furnish me with their annual reports in time to forward them with my returns to the department; but as yet I have received no answers. So soon as they are received, I will forward them. The schools, with the exception of the one at the *Petite Chute*, and that under the charge of the Rev. S. Davis, at Duck creek, have been kept very irregularly. I send herewith the reports of the several teachers, made during the year. They contain but little information.

The Oneidas number about 700 men, women, and children. They reside on a tract of land situated on the west side of Fox river, about twelve miles from Green Bay. It is said to be rich, fertile, and well watered, bearing dense forests of pine and other valuable timber. These Indians are partially civilized, and have adopted to some extent the dress, manners, and language of the Americans, and are generally Christians. They live in comfortable houses, cultivate large farms, have all the implements of husbandry, such as ploughs, wagons, horses, cattle, &c., and raise fine crops of wheat, oats, corn, barley, buckwheat, potatoes, &c.—more than a sufficiency for their own consumption. They have churches and schools, and two or three ministers of the gospel amongst them, and they generally attend divine worship on the Sabbath. Although so pleasantly situated in their present locations, they are very desirous of selling their land to the Government, and removing to the southwest of the Missouri.

Enclosed herewith are the several annual and quarterly abstracts and statements required by the regulations. In consequence of the great distance from the agency of the smiths' shops, I have been unable to keep the Menomonie blacksmiths as fully under my personal supervision as I have desired. They have, however, been kept constantly employed, since their appointment, for the benefit of the Indians, in repairing guns, and making and repairing traps, spears, axes, tomahawks, hoes, &c. The necessary quantity of iron, steel, and tools, has been furnished them for the use of the shops during the year. The maps required by the regulations I cannot furnish, for want of necessary geographical information. I am not able to offer any suggestions for the improvement of the condition of the Indians under my charge but those already made by more experienced persons than myself; and I would add, and to prevent, as far as possible, all intercourse between them and the whites, the payments of annuities to the Menomonies should be made in the latter part of August or the first of September in each year. If delayed later than this, it interferes with the rice harvest or the fall hunt.

I am, with much respect, your excellency's obedient servant,

GEORGE W. LAWE,
Indian Sub-Agent.

His Excellency JAMES D. DOTY,
Superintendent Indian Affairs.

No. 99.

Extract of a letter from Alfred Brunson, Esq., sub-agent at Lapointe, Wisconsin Territory, dated August 1, 1843, to his Excellency J. D. Doty.

* * * * * * * *

I have travelled three times through my agency north and south, by different routes, and have seen and conversed with about half of the chiefs and men at or near their homes, and, by correspondence through the farmers, missionaries, and traders, have impressed generally upon the nation the importance of agricultural and mechanical pursuits for themselves, and of education for their children, not forgetting the homage due to the *Great Spirit;* and the result has been favorable. From what I have seen and heard, these Indians have more generally planted this year than ever before; and they all say they would have done more of it, if they had had more seed.

But little corn, suitable for seed in this high northern latitude, could be obtained; and the hard winter had so destroyed the potatoes that neither farmers, missionaries, nor traders, could furnish *all* the seed *required.* I purchased about $100 worth of seed, which was distributed, expecting it to be paid out of their agricultural fund, and have contracted for seed corn raised at Red Lake for an equal sum, to be delivered and distributed generally through the nation next spring. I have also given directions to the farmers to save all the seed they can for next spring's use; and if the Indians were in their *permanent* homes, I should have sanguine hopes of rapid and lasting improvements among them.

The operations of the farm at Chippewa Falls have been retarded by circumstances over which the farmer had no control. The teams hitherto furnished from the very limited means allowed for that purpose are not sufficient to break up the prairie, and the plough obtained at considerable expense failed to perform as expected. Add to this, an unexpected frost cut off the corn and peas that were planted, and the potatoes were greatly injured; yet the potato crop was worth more to them last winter than the cost of their farmer.

But, owing to the continued hostile movements of the Sioux, who frequently visit the place, we cannot induce a Chippewa to settle near and cultivate the ground prepared for him, because of the almost certain prospect of death if he should. The farmer, therefore, can only raise all he can, and distribute it to the Indians when they most need it.

In addition to what the farmers have done, it is due to the missionaries to state that they have done much to aid the Indians in agricultural pursuits, as well as performing their more appropriate duties. Mr. Spates at Sandy Lake, Mr. Fullerton at Fond du Lac, Mr. Hall at Lapointe, Mr. Brown at Kewewenoux, and Mr. Boutwell at Packegumo, have done all and even more than their means would justify to aid the Indians in furnishing seed, ploughing, planting, and in some instances in building houses. On the whole, the Indians throughout the nation, and especially at this place, have planted more than in former years, and would have done still more if they could have procured seed.

The smith shops have proved of great service to these Indians, though they were not established on the most economical principles. Only $160 is allowed per annum to each shop, to furnish iron, steel, and coal. The coal has cost heretofore about $60 a year, leaving but $100 for stock. This amount of stock was found too small to keep two men at work the year round; and, to furnish more, I have directed the smiths to make their own coal, and have expended the amount paid for coal for iron and steel. The returns of the smiths, however, show that they have made the most they could of the materials found them, besides doing a great amount of mending.

The bane of every humane exertion (whisky) is making rapid inroads into the country, and will continue to do so, in spite of Government or all its agents, while white men are permitted to traverse at pleasure the country occupied by Indians. It is useless to call them unprincipled wretches, rascals, robbers, or by any other opprobrious epithet. They seldom, if ever, see a report concerning themselves; and, if they did, the same callous feeling and heartless principle which induces them to murder, literally murder, the red man of the forest, render them impervious to the shafts of truth, the cuts of sarcasm, or the threats of law.

They are generally, if not invariably, men of no more property than principle; and if sued and fined, cannot even pay the costs, which of course must in such case be paid by the Government; and, moreover, such is the willingness of juries to clear such men, on the most frivolous ground, that the course of law is almost a hopeless remedy; besides, the distance, 300 miles, to the nearest court having cognizance of such offences, renders it impracticable to obtain witnesses at court sufficient to sustain the action. The only remedy I know of is the summary process of destroying the liquor, as authorized by law; but this can seldom be effected, except by a military force; and such force being "few and far between," the law remains a dead letter.

But what is most horrid in this horrid traffic, and causes the blood to roll back to the humane heart with heavier chills, is the mode adopted of *manufacturing* whisky for the Indian trade—that is, corrosive sublimate, tobacco, and water, with a few gallons of whiskey to the barrel. Such a composition is said to be a deadly poison, and shows the cause of the rapid decrease of the poor Indians on the waters of the Mississippi.

The policy of leaving the Indians on the ceded lands, I am well convinced, is not a good one. It conflicts directly with another and far more preferable policy, long since established, and at which Government has been steadily aiming for the last twenty years—that of separating the Indians from the whites. It is better either not to purchase the lands at all, or remove the Indians immediately after the purchase. The whole country south of Lake Superior, to the Mississippi and the Wisconsin rivers, is now ceded territory.

But, except a few Winnebagoes, (who annually return to their old hunting grounds,) not an Indian has been removed. The whites have settled on all the principal rivers and thoroughfares, and carry with them as much whisky as they please. War parties and other Indians obtain it at pleasure, intoxication follows, which leads to depredations and sometimes to murders. The citizens' lives and property are put in jeopardy; crimination and recrimination, thefts and reprisals, are made, and dangers of an Indian war often accumulate with fearful aspects and like portentous clouds.

It is true the treaty of last fall keeps in force the law regulating trade and intercourse with the Indians, which is a wise provision, while the Indians are suffered to remain; but the constitutionality of such a provision in a treaty is questioned by those who wish to violate it, who threaten, in case of molestation, to try the question in the highest courts of judicature in the country. All this might be waived by Government agents, and the summary process of destroying the liquor resorted to, and let the owner bring suit against the agent if he choose. But another and more serious difficulty lies in the way, if the agent would "deal out equal and impartial justice to all," which he should do. Some who bear commissions from the Government claim the right to infringe upon this law, and introduce and drink as much liquor as they please. But to report such cases would be to incur great risk and trouble; for the man who would thus recklessly violate the law he is commissioned and authorized to enforce would not fail to slander, and, if possible, ruin the man who would expose him.

The country being ceded, the whites claim the right to import whisky to the lines of the late treaty, if no further; and, as more than half of the Indians of this nation who are entitled to payment, to say nothing of the Sioux, live south of the late purchase, they of course have easy access to it, and the art and ingenuity of man are not deficient in finding ways and means to send it through, and even beyond the late purchase.

Seventy barrels of whisky went up the Wisconsin last fall, and some of it reached not only the line of the late purchase, but this lake and this island; the Indians were made drunk, and several lives were lost, among whom was a son of White Crow, head chief of Sac Flambeau. Forty barrels it is said have ascended the Mississippi this season, to a point opposite Crow Wing river, only three days' march from Luck lake and Sandy lake, to which places *Indians* are employed to convey it; and about the same quantity ascends, annually, the Chippewa of the St. Croix river, besides what comes up the lakes. The right to introduce whisky into the ceded country is not denied, except that ceded last fall, notwithstanding the Indians are permitted to remain on it; and when introduced, there is no preventing the evils it carries with it.

The general character of the Chippewas, for improvement and susceptibility of improvement, has been better than that of their neighbors of the Mississippi. Besides six or eight hundred half breeds who live in habits of civilization, there are several hundred full bloods in the same mode of life, and a large portion of the remainder evince a strong disposition to pursue the same course. Many of them ask for coats, pants, &c., in their clothing, and for seed, implements of husbandry, and schools for their children. And I know of no evil demon that can hinder this people from continuing to improve, and that too with increased facilities, but whisky.

Many of these Indians have been in the habit of visiting the British every season, to receive their presents. This I endeavored to prevent by arguments and persuasions, and informing them that it was displeasing to the Government. The result is, so far as I can learn, not an Indian from this agency has visited the British this season, and I am in great hopes the practice will be entirely broken up.

Not having seen all the Indians of my charge together since I came into office, I am not able to prepare a "statement of the number of the tribe," as required by the regulation; nor, indeed, would it be possible to give the entire census of the agency, because only a *part* of the Indians within the limits receive payments, unless those bands who are not paid are visited expressly for that purpose. August 26, 1842, Governor Doty addressed a notice to this office, requiring a census of the Indians to be taken, but it did not reach here till after the opening of the navigation this spring. At the time of the payment I shall attend to this duty as far as those present are concerned, and make report accordingly.

Accompanying this you have a statement of the schools, missions, &c., within this agency; also, the reports of the farmers and smiths.

All which is respectfully submitted.

Your obedient servant,

ALFRED BRUNSON,

United States Indian Sub-Agent, Lapointe.

No. 100.

FALLS OF CHIPPEWA, *June* 30, 1843.

SIR: Herewith is annexed a statement of the crops, and labor performed by me since the 15th May, 1842, on the Indian farm, for the Chippewas in this vicinity, up to this date.

The appropriation for said farm was made so late in the season of 1841 that it was impossible to break up any land for the Indians that year. I therefore lent them ten acres of my own land that was broken up, which Mr. Bushnell, former agent, said was sufficient for one man to attend to.

The ten acres were planted, in 1842, with corn, potatoes, and peas. The corn and peas were killed by the frost on the 31st day of July last. I succeeded in getting ten bushels of peas and four hundred bushels of potatoes, which have all been delivered to the Chippewas.

I was disappointed in getting a large plough last season, (the one obtained not answering the purpose,) and could not break up any land on the Indian farm; and this year I have been again compelled to use my own land for their use. I have planted three acres of corn, three acres of potatoes, and sowed four and a half acres of peas, which, at this present time, are in good condition.

My prairie plough is daily expected from Prairie du Chein, and, as soon as it arrives, I will engage sufficient strength of team, and commence breaking up land to be ready for next spring.

Stock and utensils on hand.

1 yoke oxen.
1 ox cart.
2 axes.
1 hay fork.
1 plough.
2 scythes.
2 hoes.

LYMAN M. WARREN, *Farmer.*

ALFRED BRUNSON, Esq.,
United States Sub-Agent, Lapointe.

No. 101.

POKEGOMO, *May 22*, 1843.

DEAR SIR: Yours of the 17th of April is now before me. The Indians seem pleased with what concerns them, and say they will follow your directions.

The Indians are returning here to plant, and are as yet so unsettled that it is impossible for me to make out a report now, to embrace the time up to the 30th of June. There are now, I suppose, about one hundred and fifty souls here, and more are expected. There have been many here for seed, and I expect many more; but I think I shall have enough for them all. The ground that they cultivate is on the other side of the lake (Pokegomo) from me. I have a farm here of my own, on which I live, and on which I have expended much money. I offered it to Mr. Bushnell, when he was agent, for its cost; but he saw fit not to take it. All that I have been instructed to do for them I have endeavored to do. It was expected that they would do the work; I was to plough, and instruct them all that I could, which I have endeavored to do, when they were here.

Last season, you are aware, I suppose, they were not here at all. I raised a large crop of potatoes for them, which seems to be the most useful crop for them, and the band of this place have lived on them most of the winter, together with corn, vegetables, and pork. They have already had about three hundred bushels of potatoes, and I have about two hundred more for them. Indians have come from Mille Lac, and from the head of St. Croix, for corn and potatoes to eat, the past winter; and also, this spring, for seed; and I learn that many more are coming, and I cannot make out my report until I know how many will be here; but, as soon as I possibly can, I will forward it to you.

Your obedient servant,
J. RUSSELL, *Farmer.*

ALFRED BRUNSON, Esq.,
United States Agent for Chippewas.

P. S. They are all anxious to see you here, as expected.

POKEGOMO, *June* 30, 1843.

SIR: By a letter from you, under date of March last, I learned that reports in future had to be made out up to the last of June, instead of the last of December, as formerly. You are aware that the Chippewas of this place were driven from their homes two years ago this spring by their old enemy, the Sioux. Many of them, previous to that attack, had taken hold with energy to cultivate the soil, and I had hopes that they would soon have been comparatively well off. Since that time they have been wandering about as usual, often in a state of starvation, until this spring, when, by a great effort, made by some of the Indians, in consequence of their poverty during the two last winters, notwithstanding their fears, some forty families have been induced to resume their agricultural pursuits. Still they have been in continual fear. They told me last winter that they should return in the spring, and requested me to get them out timber for a fort; which I did before the snow went off. But in the spring they settled so far apart that I was obliged to remove some of the timber, and draw logs in addition for another fort. I have done all I could to make them feel safe, knowing that nothing could be done for their benefit permanently, unless they could feel that their wives and children were safe from a midnight attack. I have succeeded in ploughing for all; but it is impossible for one man, with only an appropriation of $500, to do much for them, as they are situated. They are about two miles apart, and each one must have a separate piece of ground. To get their ploughing done in season, I have been obliged to keep three men, (making four, with myself,) and there were not enough to work at all times to advantage; most of the ploughing is hard, and I have been obliged to use two yoke of oxen on a plough much of the time, and then two men were required. We are now at work at their fences. There are cattle running at large here, and they are obliged to have good fences, or have their crops destroyed. The most of them take hold like men who are determined to get a support from the earth, and I cannot but hope that they will soon be comparatively rich, if they are permitted to stay here unmolested. There are but two yoke of oxen here belonging to the department, which are quite inadequate to do their work, so detached are their gardens. I have three yoke of my own, and two more which I hire, which gives me team enough.

I was instructed by the former agent to provide seeds for them only, and to give them to understand that they must depend upon their own labor. I have, when the Indians have been here, endeavored to comply with those instructions; but the past season they were not here, and I raised twelve hundred bushels of potatoes, three hundred bushels of ruta bagas and other vegetables, and fifty bushels of corn. Six hundred bushels of potatoes, ruta bagas, &c., were given out to them last winter to eat, and this spring for seed and to eat.

They encamped within half a day's journey of this place, and seemed to depend upon me for their support. They were not satisfied with potatoes alone when they visited their farm, but must have pork and flour. But they now seem to feel grateful for what assistance they received, and say that, but for the aid they had from here and the mission, (which has been kind to them,) they must have starved.

The Indians (or many of them) from Mille Lac, the head of St. Croix, Clam Lake, and Yellow Lake, have been here for seed, and have all been supplied. They have now about twenty acres under cultivation, enough to support all that are here, with proper management. I have furnished them, as well as Indians from a distance, with all kinds of seeds, corn, beans, pumpkins, squashes, beets, turnips, and all others they wished for, and they all seemed quite encouraged, and are looking anxiously for a visit from their *father*.

Stock on hand.

2 yoke oxen.
1 calf three months old.
2 chains.
2 planes.
1 corn mill.
1 cow.
3 ploughs.
1 harrow.
2 axes.

Yours, with much respect,
J. RUSSELL, *Farmer.*

Alfred Brunson, Esq.,
United States Agent for Chippewas.

No. 102.

Office of the New York Sub-Agency,
Buffalo, September 30, 1843.

Sir: In compliance with the regulations of the department, it becomes my duty to report the situation of the several tribes of Indians in charge of this sub-agency.

Since my last annual report no material change has taken place; the Senecas remain in an unsettled state, and must remain so until the amended treaty of May, 1842, is carried out.

There is a small party of Senecas, (and Cayugas, who reside with the Senecas,) who are desirous of removing west of the Mississippi, under the provisions of the treaty of 1838.

There are several families residing on the Buffalo Creek reservation, who are anxious to remove to the Cattaraugus and Allegany, as soon as they receive pay for their improvements, under the treaty of 1842, to enable them to do so.

That portion of the Senecas residing on the Tonawanda reservation are still dissatisfied with the terms of the treaty, although at this time there appears to be a disposition on the part of many of them to remove quietly to Cattaraugus and Allegany, whenever the time arrives for them to leave their present homes.

Very respectfully, your obedient servant,
S. OSBORN.

Hon. T. Hartley Crawford,
Commissioner Indian Affairs.

No. 103.

Miami Sub-Agency,
Indiana, October 12, 1843.

Sir: In conformity to the regulations of your department (Indian Affairs) I submit my annual report of the condition of the Miami tribe, under charge of this sub-agency. It is much the same as last season, except that they are less violent; no murders have been committed amongst them during the year, and very few deaths have occurred. More children have been born than usual; this is the first year during my acquaintance with this tribe for eighteen years that they have increased, being an increase of nigh thirty. The use of whisky is freely indulged in by nearly all the tribe—so completely surrounded by whites, whose cupidity induces them, almost in every instance, to keep and sell whisky to these poor and easily deluded beings—although the laws of this State prohibit, under severe penalty, the sale of intoxicating drink to Indians; yet, as we also have laws prohibiting the reception of Indian testimony against whites, the former law is nearly a dead letter. I have repeatedly, in conformity to your instructions, urged the chiefs to avail themselves of the bounty of the Government in sending some of their children to the Choctaw academy; they have refused to let them go, alleging as a reason the distance, while some of the chiefs are sending their children to school in their immediate vicinity. Lafontaine, the principal chief, employs a teacher for his own family. Having urged upon the chiefs the necessity of a speedy removal to their new homes west, where the Government could throw around them a greater protection, I have the gratification to inform you they view their removal with more favor and cheerfulness than at any former period; nor can I doubt, by prudent management, they can be got off within the time specified in the treaty of 1840. *I am requested by the chiefs in council to renew their application to you for the sending a delegation of their chiefs west*, expenses to be paid by the United States, under the treaty of 1838, as they desire to send a few chiefs to view the country assigned them west, as soon as it is the pleasure of the Government to furnish the means. But few of the Miamies pursue the chase, and fewer still cultivate the soil—depending entirely for support on their annuities. I have again to state my conviction, that nothing can be done to change the habits or mitigate the condition of the tribe, until they remove to where the act regulating trade and intercourse with the Indian tribes can be brought to operate in suppressing the use and sale of intoxicating drink, that bane to the Indian race. If they cannot be so restrained, the race must become extinct; such, I feel assured, will be the result with the Miamies.

Very respectfully, your obedient servant,

ALLEN HAMILTON.

T. Hartley Crawford, Esq.,
Commissioner Indian Affairs.

No. 104.

Oregon, *April* 1, 1843.

Sir: On my arrival I had the honor and happiness of addressing you a brief communication, giving information of my safe arrival, and that of our numerous party, to these distant shores.

At that time it was confidently expected that a more direct, certain, and expeditious method, would be presented to address you in a few weeks; but that failing, none has offered till now.

I think I mentioned the kind and hospitable manner we were received and entertained on the way, by the gentlemen of the Hudson Bay Company, and the cordial and most handsome reception I met with at Fort Vancouver, from Governor McLaughlin, and his worthy associate chief factor, James Douglass, Esq.; my appointment giving pleasure rather than pain—a satisfactory assurance that these worthy gentlemen intend eventually to settle in this country, and prefer American to English jurisdiction.

On my arrival in the colony, sixty miles south of Vancouver, being in advance of the party, and coming unexpectedly to the citizens, bearing the intelligence of the arrival of so large a reinforcement, and giving assurance of the good intentions of our Government, the excitement was general, and two days after we had the largest and happiest public meeting ever convened in this infant colony.

I found the colony in peace and health, and rapidly increasing in numbers, having more than doubled in population during the last two years. English, French, and half breeds, seem, equally with our own people, attached to the American cause; hence the bill of Mr. Linn, proffering a section of land to every white man of the Territory, has the double advantage of being popular and useful, increasing such attachment, and manifestly acting as a strong incentive to all, of whatever nation or party, to settle in this country.

My arrival was in good time, and probably saved much evil. I had but a short season of rest after so long, tedious, and toilsome a journey, before information reached me of the very improper conduct of the upper country Indians towards the missionaries sent by the American board of commissioners, accompanied with a passport, and a desire for my interposition in their behalf at once.

I allude to the only three tribes from which much is to be hoped, or any thing to be feared, in this part of Oregon. These are the Wallawallas, Keyuse, and Nesperces, inhabiting a district of country on the Columbia and its tributaries, commencing two hundred and forty miles from its mouth, and stretching to four hundred and eighty into the interior. The Wallawallas, most contiguous to the colony, number some three thousand, including the entire population. They are in general poor, indolent, and sordid, but avaricious; and what few have property, in horses and herds, are proud, haughty, and insolent. The Keyuse, next easterly, are less numerous, but more formidable, being brave, active, tempestuous, and warlike. Their country is well watered, gently undulating, extremely healthy, and admirably adapted to grazing, as Dr. Marcus Whitman may have informed you, who resides in their midst. They are comparatively rich in herds, independent in manner, and not unfrequently boisterous, saucy, and troublesome, in language and behaviour. The Nesperces, still further in the interior, number something less than three thousand; they inhabit a beautiful grazing district, not surpassed by any I have seen for verdure, water privileges, climate, or health. This tribe form, to some extent, an honorable exception to the general Indian character, being more noble, industrious, sensible, and better disposed towards the whites and their improvements in the arts and sciences; and, though as brave as Cæsar, the whites have nothing to dread at their hands, in case of their dealing out to them what they conceive to be right and equitable. Of late, these three tribes have become strongly united by reason of much intermarriage. For the last twenty years, they have been generally well disposed towards the whites; but at the time Captain Bonneville visited this district of country, he dealt more profusely in presents and paid a higher price for furs than Mr. Pambro, one of the traders of the Hudson Bay Company, established at Wallawalla, who had long dealt with them, and was previously a general favorite. On Mr. Bonneville's leaving, the chiefs assembled at the fort, and insisted on a change of the tariff in their favor. Pambro refusing, they seized him, stamped violently upon his breast, beat him severely, and retained him prisoner, in rather unenviable circumstances, till they gained, to a considerable extent, their object. Since that time, they have been more consequential in feeling, and shown less deference and respect to the whites. On the arrival of missionaries among them, they have never failed to make, at first, a most favorable impression, which has, in most instances, unfortunately, led to too near an approach to familiarity, operating alike prejudicial to both parties. The Rev. Messrs. Lee and Parker, who made each but a short stay among them, left with like favorable impressions. Their successors, Spaulding, Whitman, Gray, and ladies, with others who remained among them, were at last driven to the conclusion that Indians as much resemble each other in character as complexion. These worthy people, not well versed in Indian character, and anxious to accomplish a great deal in a short time, resorted to various expedients to induce them to leave off their wandering migratory habits, and settle down contiguous to them in herding and agricultural pursuits, so as to be able to send their numerous and healthy children to school. In these efforts they were zealous and persevering, holding out various inducements as so many stimulants to action, most of which would have operated well in civilized life, but generally failing with these Indians; and whatever was promised conditionally, whether the condition was met or otherwise, there was no reprieve—the promised article must come, and sometimes under circumstances sufficiently trying, had these missionaries been less devoted, to have driven them from their post forever.

The Indians, having gained one and another victory, became more and more insolent, till at last, some time previously to my arrival, they were not only obtrusive and exceedingly annoying about and in the missionaries' houses, but seized one of the clergymen in his own house—without a shadow of provocation further than that of treating a better neighboring chief with more respect than they—and insulted him most shamefully; there being no other white person within fifty miles, save his sick and delicate lady. Soon after, they commenced on Dr. Whitman; pulled his ears and hair, and threw off his hat three times into the mud at his feet. A short time after, the chiefs assembled, broke into the house, violently assailed his person with war clubs, and with an axe broke down the door leading to his own private apartment. It is generally thought, and possibly with truth, that, on this occasion, Dr. W. would have been killed, had not a party of white men arrived in sight just at this moment. Never were such an outrage and insult more undeserving. He had built, for the express purpose of Indian accommodation, a house of the same materials, and finished in like manner with his own, of respectable size, and joined to his, and at all times, night and day, accessible. In addition to this, they were admitted to every room of his house but one. This being closed had like to have cost him his life. He had hardly left for the States last fall, when, shocking to relate, at the hour of midnight, a large Indian chief managed to get into the house, came to the door of Mrs. Whitman's bedchamber, and had succeeded in getting it partly open before she reached it. A white man, sleeping in an adjoining apartment, saved her from violence and ruin. The villain escaped. There was but one thing wrong in this matter, on the part of Dr. W.; and that was a great error—leaving his excellent lady unprotected in the midst of savages. A few days after this, they burned down the mission mill on his premises, with all its appendages with it, and considerable grain, damaging them not less than twelve or fifteen hundred dollars. About the same time Mrs. Spalding was grossly insulted in her own house, and ordered out of it, in the absence of her husband. Information reaching him of an Indian having stolen his horse near the same time, he hastened to the spot to secure the animal, but the rogue had crossed the river; but, immediately returning, he presented his loaded gun, cocked, to the breast of Mr. Spalding, abused and menaced as far as possible without shooting him.

In addition to this, some of our own party were robbed openly of considerable property, and some twelve horses were stolen by night. All this information, coming near the same time, was embarrassing, especially as my instructions would not allow me to exceed, for office, interpreter, and every purpose, $1,250 per annum. On the other hand, the passport signed by the Secretary of War made it my imperative duty to protect them in their persons at least from outrage. I did not long hesitate, but called upon Thomas McKay, long in the employment of the Hudson Bay Company as explorer and leader of parties, who, from his frank, generous disposition, together with his universal success in Indian warfare, has obtained an extensive influence among the aborigines of this country, and placing the facts before him, he at once consented to accompany me to this scene of discord and contention. We took but six men with us, armed in the best manner, a sufficient number to command respect and secure the object of our undertaking—McKay assuring me, from his familiar acquaintance with these Indians, and their thorough knowledge of the use of arms, that if hostile intentions were entertained, it would require a larger party than we could raise in this country to subdue them. Obtaining Cornelius Rogers as interpreter, we set out on the 13th November (as McKay justly denominated it) on our voyage of misery, having a journey, by water and land, of not less than nine hundred and fifty miles, principally over open plains, covered with snow, and several times under the necessity of spending the night without wood or fire, other than what was made by a small growth of wild sage, hardly sufficient to boil the tea kettle. The gentlemen, as we called at Vancouver, did every thing in their power to make the journey comfortable, but evidently felt anxious concerning our safety. We reached the Dalles, some two hundted and twenty miles from the Pacific, on the 24th, having been detained by wind, spent several days with the Methodist mission families, who welcomed us joyfully, and made our stay agreeable and refreshing. Mrs. Dr. Whitman was here, having found it improper and unsafe to remain where she had been so lately grossly insulted. Her noble and intellectual mind and spirit were much depressed, and her health suffering; but still entertaining for the people or Indians of her charge the feelings of a mother towards ungrateful children; our visit encouraged her. We procured horses and travelled by land to Wallawalla, 140 miles above, reaching the Hudson Bay establishment on the 30th. Mr. McKinley, the gentleman in charge, to whom the missionaries are indebted for many kind offices in this isolated portion of the earth, resolved to make it a common cause, and stand or fall with us. We reached Waiilatpa, the station of Dr. Whitman, the day following, and were shocked and pained at beholding the sad work of savage destruction upon this hitherto neat and commodious little establishment. .The Indians in the vicinity were few and shy. I thought best to treat them with reserve, but made an appointment to meet the chiefs and tribe on my return. Left the day following for the station of Mr. Spalding among the Nesperces, some 120 or 130 miles from Waiilatpa; reached it on the 3d of December, after a rather pleasant journey over a most verdant and delightful grazing district, well watered, but badly timbered. Having sent a private despatch in advance, they had conveyed the intelligence to the Indians, many of whom were collected. The chiefs met us with civility, gravity, and dignified reserve, but the missionaries with joyful countenances and glad hearts.

Seldom was a visit of an Indian agent more desired, nor could one be more necessary and proper. As they were collecting, we had no meeting for eight-and-forty hours; in the mean time, through my able interpreter and McKay, I managed to secure confidence and prepare the way to a good understanding; visited and prescribed for their sick, made a short call at each of the chief's lodges, spent a season in school, hearing them read, spell, and sing; at the same time examined their printing and writing, and can hardly avoid here saying I was happily surprised and greatly interested at seeing such numbers so far advanced and so eagerly pursuing after knowledge. The next day I visited their little plantations, rude to be sure, but successfully carried on, so far as raising the necessaries of life were concerned; and it was most gratifying to witness their fondness and care for their little herds, pigs, poultry, &c. The hour arriving for the public interview, I was ushered into the presence of the assembled chiefs, to the number of twenty-two, with some lesser dignitaries, and a large number of the common people. The gravity, fixed attention, and decorum, of these sons of the forest, were calculated to make for them a most favorable impression. I stated explicitly, but briefly as possible, the design of our great chief in sending me to this country, and the present object of my visit; assured them of the kind intentions of our Government, and of the sad consequences that would ensue to any white man, from this time, who should invade their rights, by stealing, murder, selling them damaged for good articles, or alcohol, of which they are not fond. Without threatening, I gave them to understand how highly Mr. and Mrs. Spalding were prized by the numerous whites, and with what pleasure the great chief gave them a paper to encourage them to come here to teach them what they were now so diligently employed in obtaining, in order that they and their children might become good, wise, and happy. After Mr. McKinley, the gentleman in charge at the Hudson Bay establishment at Wallawalla, spoke concisely, but very properly; alluded to his residence of some years, and of the good understanding that had generally existed between them, and of the happiness he felt that one of his brothers had come to stand and judge impartially between him, them, and whites and Indians in general; declared openly and frankly that Boston, King George, and French, were all of one heart in this matter, as they, the Keyuse and Wallawallas, should be; flattered them delicately in view of their (to him) unexpected advancement in the arts and sciences, and resumed his seat, having made a most favorable impression. Next followed Mr. Rogers, the interpreter, who, years before, had been employed successfully as linguist in this section of country by the American board of commissioners, and was ever a general favorite with this people.

He adverted sensibly and touchingly to past difficulties between whites and Indians west of the mountains, and the sad consequences to every tribe who had resisted honorable measures proposed by the more numerous whites; and having, as he hoped, secured their confidence in my favor, exhorted them feelingly to adopt such measures as should be thought proper for their benefit.

Next, and lastly, arose Mr. McKay, and remarked, with a manner peculiar to himself, and evidently with some emotion: I appear among you as one arose from the long sleep of death. You know of the violent death of my father on board the ship Tonquin, who was one of the partners of the Astor Company; I was but a youth; since which time, till the last five years, I have been a wanderer through these wilds; none of you, or any Indian in this country, having travelled so constantly or extensively as I have, and yet I saw you or your fathers once or more annually. I have mingled with you in bloody wars and profound peace; I have stood in your midst, surrounded by plenty, and suffered with you in seasons of scarcity; we have had our days of wild and joyous sports, and nights of watching and deep concern, till I vanished from among men, left the Hudson Bay Company, silently retired to my plantation, and there confined myself. There I was still, silent, and as one dead; the voice of my brother, at last, aroused me; I spoke and looked; I mounted my horse—am here. I am glad it is so. I come at the call of the great chief, the chief of all the whites in the country, as well as all the Indians, the son of the mighty chief whose children are more numerous than the stars in the heavens or the leaves in the forest. Will you hear, and be advised? You will. Your wonderful improvement in the arts and sciences prove you are not fools. Surely you will hear; but if disposed to close your ears and stop them, they will be torn open wide, and you will be made to hear. This speech from Mr. McKay, whose mother is part Indian, though the wife of Governor McLaughlin, had a singularly happy influence, and opened the way for expressions on the other side, from which there had not hitherto been a sentence uttered. First arose Five Crows, a wealthy chief of 45, neatly attired in English costume. He stepped gravely but modestly forward to the table, remarking: It does not become me to speak first; I am but a youth, as yet, when compared to many of these my fathers; but my feelings urge me to arise and say what I am about to utter in a very few words. I am glad the chief has come; I have listened to what has been said; have great hopes that brighter days are before us, because I see all the whites united in this matter; we have much wanted something; hardly know what; been groping and feeling for it in confusion and darkness. Here it is. Do we see it, and shall we accept it?

Soon the Bloody Chief arose, (not less than 90 years old,) and said: I speak to-day, perhaps to-morrow I die. I am the oldest chief of the tribe; was the high chief when your great brothers, Lewis and Clark, visited this country; they visited me, and honored me with their friendship and counsel. I showed them my numerous wounds received in bloody battle with the Snakes; they told me it was not good, it was better to be at peace; gave me a flag of truce; I held it up high; we met and talked, but never fought again. Clark pointed to this day, to you, and this occasion; we have long waited in expectation; sent three of our sons to Red river school to prepare for it; two of them sleep with their fathers; the other is here, and can be ears, mouth, and pen, for us. I can say no more; I am quickly tired; my voice and limbs tremble. I am glad I live to see you and this day, but I shall soon be still and quiet in death.

The speech was affecting. Six more spoke, and the meeting adjourned three hours. Met at the hour appointed. All the chiefs and principal men being present, stated delicately the embarrassed relation existing between whites and Indians in this upper country, by reason of a want of proper organization, or the chiefs' authority not being properly regarded; alluded to some cases of improprieties of young men, not sanctioned by the chiefs and old men; and where the chiefs had been in the wrong, hoped it had principally arisen from imperfectly understanding each other's language, or some other excusable cause, especially so far as they were concerned. Advised them, as they were now to some extent prepared, to choose one high chief of the tribe, and acknowledge him as such by universal consent; all the other subordinate chiefs being of equal power, and so many helps to carry out all his lawful requirements, which they were at once to have in writing, in their own language, to regulate their intercourse with whites, and in most cases with themselves. I advised that each chief have five men as a body guard, to execute all their lawful commands. They wanted to hear the laws. I proposed them one by one, leaving them as free to reject as to accept. They were greatly pleased with all proposed, but wished a heavier penalty to some, and suggested the dog law, which was annexed. We then left them to choose the high chief, assuring them if they did this unanimously by the following day at ten, we would all dine together with the chief on a fat ox at three, himself and myself at the head of the table; this pleased them well, and they set about in good cheer and high hopes; but this was a new and delicate task, and they soon saw and felt it; however, all agreed that I must make the selection, and so reported two hours after we left. Assuring them this would not answer, that they must select their own chief, they seemed somewhat puzzled, and wished to know if it would be proper to counsel with Messrs. McKay and Rogers. On telling them that it was not improper, they left a little relieved, and worked poor Rogers and McKay severely for many hours; but all together at length figured it out, and in great good humor, so reporting at ten, appointing Ellis high chief. He is the one alluded to by the Bloody Chief, a sensible man of thirty-two, reading, speaking, and writing the English language reasonably well; has a fine small plantation, a few sheep, some neat stock, and no less than eleven hundred head of horses. Then came on the feasting; our ox was fat, and cooked and served up in a manner reminding me of the days of yore; we ate beef, corn, and peas, to our fill, and in good cheer took thepipe, when Rev. Mr. Spalding, Messrs. McKinley, Rogers, and McKay, wished a song from our boatmen; it was no sooner given than returned by the Indians, and repeated again, again, and again, in high cheer. I thought it a good time, and required all having any claim to bring, or grievances to allege, against Mr. Spalding, to meet me and the high chief at evening in the council room, and requested Mr. Spalding to do the same on the part of the Indians. We met at six, and ended at eleven, having accomplished, in the happiest manner, much anxious business. Being too well fed to be irritable, or disposed to quarrel, both parties were frank and open, seeming anxious only to learn our opinion upon plain undisguised matters of fact, many of the difficulties having arisen from an honest difference of sentiment respecting certain measures.

Ellis, the chief, having conducted himself throughout in a manner creditable to his head and heart, was quite as correct in his conclusions and firm in his decisions as could have been expected. The next day we had our last meeting, and one full of interest, in which they proposed to me many grave and proper questions; and, as it was manifestly desired, I advised in many matters, especially in reference to begging or even receiving presents, without, in some way, returning an equivalent; pointed out in strong language who beggars are among the whites, and how regarded; and commended them for not once troubling me, during my stay, with this disgusting practice; and as a token of respect, now, at the close of our long and happy meeting, they would please except, in the name of my great chief, a present of fifty garden hoes, not for those in authority, or such as had no need of them, but for the chiefs and Mr. Spalding to distribute among their industrious poor. I likewise, as they were very needy, proposed and ordered them some medicines, to be distributed as they should from time to time be required. This being done, I exhorted them to be in obedience to their chiefs, highly approving the choice they had made, assuring them, as he and the other chiefs were responsible to me for their good behaviour, I should feel it my duty to see them sustained in all lawful measures to promote peace and order. I then turned, and with good effect desired all the chiefs to look upon the congregation as their own children, and then pointed to Mr. Spalding and lady, and told the chiefs, and all present, to look upon them as their father and mother, and treat them in all respects as such; and should they happen to differ in sentiment respecting any matter during my absence, be cautious not to differ in feeling, but leave it till I should again return, when the chief and myself would rectify it. Thus closed this mutually happy and interesting meeting, and, mounting our horses for home, Mr. Spalding and the chiefs accompanied me for some four or five miles, when we took leave of them in the most pleasant manner, not a single circumstance having occurred to mar our peace or shake each other's confidence.

I shall introduce a note, previously prepared, giving some further information respecting this tribe, and appending a copy of their laws. The Nesperces have one governor or principal chief, twelve subordinate chiefs of equal power, being the heads of the different villages or clans, with their five officers to execute all their lawful orders, which law they have printed in their own language, and read understandingly. The chiefs are held responsible to the whites for the good behaviour of the tribe. They are a happy and orderly people, forming an honorable exception to the general Indian character, being more industrious, cleanly, sensible, dignified, and virtuous.

This organization was effected last fall, and operates well, and with them, it is to be hoped, will succeed. A few days since Gov. McLaughlin favored me with a note addressed to him from the Rev. H. H. Spalding, missionary to this tribe, stating as follows:

"The Indians in this vicinity are remarkably quiet this winter, and are highly pleased with the laws recommended by Dr. White, which were unanimously adopted by the chiefs and people in council assembled. The visit of Dr. White and assistants to this upper country will evidently prove an incalculable blessing to this people. The school now numbers two hundred and twenty-four in daily attendance, embracing most of the chiefs and principal men of the nation."

LAWS OF THE NESPERCES.

ART. 1. Whoever wilfully takes life shall be hung.

ART. 2. Whoever burns a dwelling house shall be hung.

ART. 3. Whoever burns an out building shall be imprisoned six months, receive fifty lashes, and pay all damages.

ART. 4. Whoever carelessly burns a house, or any property, shall pay damages.

ART. 5. If any one enter a dwelling, without permission of the occupant, the chiefs shall punish him as they think proper. Public rooms are excepted.

ART. 6. If any one steal he shall pay back two-fold; and if it be the value of a beaver skin or less he shall receive twenty-five lashes; and if the value is over a beaver skin he shall pay back two-fold, and receive fifty lashes.

ART. 7. If any one take a horse, and ride it, without permission, or take any article, and use it, without liberty, he shall pay for the use of it, and receive from twenty to fifty lashes, as the chief shall direct.

ART. 8. If any one enter a field, and injure the crops, or throw down the fence, so that cattle or horses go in and do damage, he shall pay all damages, and receive twenty-five lashes for every offence.

ART. 9. Those only may keep dogs who travel or live among the game; if a dog kill a lamb, calf, or any domestic animal, the owner shall pay the damage, and kill the dog.

ART. 10. If an Indian raise a gun or other weapon against a white man, it shall be reported to the chiefs, and they shall punish him. If a white man do the same to an Indian, it shall be reported to Dr. White, and he shall punish or redress it.

ART. 11. If an Indian break these laws, he shall be punished by his chiefs; if a white man break them, he shall be reported to the agent, and punished at his instance.

'After a severe journey, of some four days, through the inclemency of the weather, we reached Waiilatpa, Dr. Whitman's station, where we had many most unpleasant matters to settle with the Keyuse tribe—such as personal abuse to Dr. Whitman and lady, burning the mill, &c. Several but not all of the chiefs were present. Learning what the Nesperces had done gave them great concern and anxiety. Toniti, the high chief, and Feathercap, were there, with some few more dignataries, but manifestly uneasy, being shy and cautious. I thought it best under the circumstances to be quiet, distant, and reserved, and let them commence the conversation with my worthy and faithful friends, Rogers and McKay—both conducting with characteristic firmness and candor. They had not proceeded far before Feathercap, so far as we know, for the first time in his life, commenced weeping, and wished to see me; said his heart was sick, and he could not live long as he now felt. Toniti, who was no way implicated personally in the difficulties, and a clever man, continued for some time firm and steady to his purpose; said the whites were much more to blame than the Indians; that three-fourths of them, though they taught the purest doctrines, practised the greatest abominations—alluding to the base conduct of many in the Rocky Mountains, where they meet them on their buffalo hunts during the summer season, and witness the greatest extravagances. They were shown the inapplicability of such instances to the present cases of difficulty. He, too, at last, was much subdued; wished to see me; was admitted; made a sensible speech in his own favor; said he was constituted eight years before high chief, entered upon its duties with spirit and courage, determined to reduce his people to order. He flogged the young men, and reproved the middle aged, till, having none to sustain him, his popularity had so declined, that, except in seasons of difficulty, brought about by their improprieties, I am left alone to say my prayers, and to go to bed, to weep over the follies and wickedness of my people. Here his voice trembled, and he wept freely—acknowledged his opinion that the mill was burnt purposely by some disaffected persons toward Dr. Whitman. I spoke kindly and somewhat encouragingly to these chiefs; assured them the guilty only were to be regarded as such; and that candor was commendable, and would be honored by all the good; assured them I credited all they said, and deplored the state of their nation, which was in perfect anarchy and confusion; told them I could say but little to them now, as their chiefs were mostly abroad; but must say the shocking conduct of one of the chiefs towards Mrs. Whitman *greatly* afflicted me; and that, with the destruction of the mill, and their abominable conduct towards Dr. Whitman, if not speedily settled, would lead to the worst of consequences to their tribe. I made an engagement to meet them and all the tribe on the —— of the ensuing April, to adjust differences, and come to a better understanding, they earnestly wishing to adopt such laws as the Nesperces had done. We should probably have accomplished a satisfactory settlement, had not several of the influential chiefs been too far away to get information of the meeting. We reached Woscopum on the 25th December, the Indians being in great excitement, having different views and impressions respecting the nature of the approaching visit. We spent four days with them, holding meetings daily, instructing them in the nature of government, civil relations, domestic duties, &c. Succeeded, in like happy manner, with them as with the Nesperces, they unanimously adopting the same code of laws.

Late information from one of their missionaries, you will see in *the following* note from Mr. H. B. Brewer:

"The Indians of this place intend to carry out the regulations you left them to the letter; they have been quite engaged in cutting logs for houses, and live in expectation of better dwellings by and by. For the least transgression of the laws, they are punished by their chiefs immediately. The clean faces of some, and the tidy dresses of others, show the good effects of your visit."

And here allow me to say, except at Woscopum, the missionaries of this upper country are too few in number at their respective stations, and in too defenceless a state for their own safety, or the best good of the Indians, the latter taking advantage of these circumstances, to the no small annoyance, and, in some instances, greatly endangering the personal safety, of the former. You will see its bearings upon this infant colony, and doubtless give such information or instructions to the American board of commissioners or myself as will cause a correction of this evil. It has already occasioned some difficulty and much cost. I have insisted upon an increase of numbers at Mr. Spalding's mission, which has accordingly been reinforced by Mr. Littlejohn and lady, rendering that station measurably secure; but not so at Waiilatpa, or some of the Catholic missions, where some of them lost a considerable amount in herds during last winter, and, I am told, were obliged to abandon their posts, their lives being endangered. This was in the interior, near the Blackfeet country.

You will observe from the reports of the different missions, which, so far as I am otherwise informed, are correct, that they are doing some positive good in the country, not only by diffusing the light of science abroad among us, but also by giving employment to many, and, by their drafts upon the different boards and others, creating a circulating medium in this country; but, though they make but comparatively slow progress in the way of reform among the aboriginies of this country, their pious and correct example has a most restraining influence upon both whites and Indians, and in this way they prevent much evil.

They have in successful operation six schools. Rev. Mr. and Mrs. Spalding (whose zeal and untiring industry for the benefit of the people of their charge entitle them to our best considerations) have a school (of some two hundred and twenty-four in constant attendance) most successfully carried forward, which gives promise of great usefulness to both sexes and all ages. Rev. Messrs. Walker and Eells I have not been at leisure to visit, but learn they have two small schools in operation. The one at Waiilatpa, Dr. Whitman's station, is now recommenced, with promise of usefulness.

The Rev. Mr. Blanchette and associates, though zealous Catholics, are peaceable, industrious, indefatigable, and successful, in promoting religious knowledge among the Canadian population and aborigines of this country. Their enterprise in the erection of mills and other public works is very commendable, and the general industry, good order, and correct habits of that portion of the population under their charge is sufficient proof that their influence over their people has been exerted for good. The Rev. Mr. Lee and associates, aside from their well-conducted operations at the Dalles, upon the Columbia, and a school of some thirty scholars successfully carried forward upon the Wallamette, are doing but little for the Indians; nor could greater efforts produce much good among the scattered remnants of the broken tribes of this lower district, who are fast disappearing before the ravages of the most loathsome diseases. Their principal hopes of success in this country are among the whites, where they are endeavoring to lay deep and broad the foundations of science. The literary institution referred to by Mr. Lee is situated upon a beautiful rising ground, a healthy and eligible location. Could a donation of five thousand dollars be bestowed upon the institution, it would greatly encourage its friends. The donations made by individuals of this country have been most liberal, several giving one-third of all they possessed. There is a small school established at Talyten plains, by Rev. Mr. Clark and lady. There is also a school at the Catholic mission, upon the Wallamette, and also one at their station upon the Cowlitz. For further information, I will refer you to the reports made, at my request, by the several missions, and accompanying these despatches.

The country upon the Columbia and its tributaries, as far as the Dalles, a distance of two hundred and twenty miles from its mouth, is well timbered; above the Dalles timber is scarce, large districts being destitute, except here and there a small quantity growing upon the streams of water. The country between the Columbia and California is well timbered, and of a fine quality. The country upon the Columbia is, generally, too rough and mountainous ever to become an agricultural country; but south of the Columbia, in the valley of the Wallamette, the soil is admirably adapted to the purposes of agriculture, being generally level prairies, surrounded by timbered land, and intersected by numerous small streams. This is the character of the country, generally, to a great distance towards California. Mr. Spalding's report gives a general statement of the character of the country bordering upon the Columbia above the Dalles. The Columbia is the principal river of this region; its bar is somewhat difficult, owing to the want of proper charts, &c. The ships of the Hudson Bay Company are, however, in the constant habit of ascending it as far as Vancouver fort. The Wallamette, a tributary of the Columbia can be ascended at some seasons of the year by vessels of two hundred tons, to within a few miles of the falls.

The Omqua river has a fine but small harbor, but probably cannot be ascended to a great distance by vessels of large size. The Nasqually, as you have been doubtless informed by Commander Wilkes, about one hundred and forty miles north of Columbia, forms a fine harbor; the river, however, not being navigable to a great distance by large vessels.

Stone for building purposes is abundant upon the banks of the Columbia, stretching far into the interior. There is some granite, but basaltic stone is very abundant upon the Wallamette, to some distance above the falls. Limestone has been said to have been found in some quantities in the neighborhood of the mouth of the Columbia, though I have not as yet had time to examine. Lime has never been made in this country, except in small quantities, by burning the coral obtained from the Sandwich islands. Bricks have been made to some small extent, and there are two persons in the country who understand making them. There are several mechanics in the colony, but, from the want of tools and materials, they do not attempt to carry on their trades. There are nine carpenters and two stone masons in the settlement. There are settlements established upon the Wallamette, sixty-five miles from its mouth: at Tolyton plains, twelve miles south of the Columbia, and twenty west of the Wallamette falls; at Clotsop plains, eight miles south of the mouth of the Columbia; and at the falls of the Wallamette, a population of seventy, engaged in building storehouses, mills, &c. Here is a water power of very great extent. The river here takes a perpendicular descent of thirty-eight feet, presenting as extensive and advantageous sites for mills and factories as any where exist. At the Clackamus, a small stream falling into the Wallamette two miles below the falls, there is a population of twenty persons. This settlement commenced last fall; it is seven miles from the falls by land, and upon a pleasant and somewhat extensive prairie.

At the Cowlitz, a somewhat rapid river, falling into the Columbia from the north about fifty miles from its mouth, there is a small settlement of sixty-four four persons, enjoying the benefits of the Catholic ministry. The face of the country upon the Cowlitz is generally level, the soil thin, and impregnated with magnesia, being less fertile than that of the Wallamette valley. Your inquiry respecting the comparison between Oregon, from the Dalles to the Pacific, (some 220 miles,) and the New England States, I am now somewhat better prepared to answer, having visited more of this country, and likewise most of the New England

States. As a whole, in point of soil, I think it much better, having greatly the advantage in climate, and superior as a grazing country, not being obliged to winter the stock.

I must close by praying that measures may speedily be entered into to take possession of this country, if such steps have not already been taken. I left home before the close of the session of Congress, and by reason do not know what disposition was made of Hon. Mr. Linn's bill. As a reason for thus praying, I would here say, the time was when the gentlemen of the Hudson Bay Company and the missions wielded the entire influence over this small population; but, as they have been reinforced latterly from whale ships, the Rocky Mountains, and the Southwestern States, these hitherto salutary restraints and influences are giving away and being measurably lost.

At present I have considerable influence, but cannot long expect to retain it, especially in the faithful discharge of my duty. As a reason for coming to such a conclusion, I had but just arrived from the interior when I received an urgent call to visit the mouth of the Columbia. I left at once, in company with Nathaniel Crocker, Esq., Mr. Rogers, my interpreter, his lady, and her young sister, (the females going only to the falls,) with a crew of Indians, on our ill-fated expedition. We reached the falls at sunset, February 1, and by reason of the water being higher than usual, in passing around a jutting or projecting rock, the canoe came up suddenly against a log constituting the landing, at which instant I stepped off, and in a moment the canoe was swept away, with all its precious cargo, over the falls of thirty-eight feet, three rods below. The shock was dreadful to this infant colony, and the loss was dreadful and irreparable to me, Mr. Rogers being more important to me than any one in the country; nor was there a more respectable or useful man in the country. Nathaniel Crocker came in with me last fall from Tompkins county; he was much pleased with the country and its prospects, and the citizens were rejoiced at the arrival of such a man in this country; he was every way capacitated for usefulness. None of the bodies of the four whites or two Indians have been as yet found.

* * * * * * * * *

On arriving at the mouth of the Columbia, I found a sailor by the name of George Geere, who had most evidently and maliciously labored to instigate the Indians to take the life of one of the mission gentlemen, by the offer of five blankets. Complaints being made, and having no better means, I prevailed upon Governor McLaughlin to allow him to accompany their express across the mountains to the States. I would here say, as the scamp was nearly a fool as well as a villain, I allowed him to go without sending evidence against him, on condition of his going voluntarily, and never returning.

I here likewise found a rash venturesome character about starting off on a trapping and trading excursion among a somewhat numerous band of Indians, and no wise well disposed towards the whites. As he saw and felt no danger, arguments were of no avail, and threats only prevented.

Sir, shall men be allowed to go wherever they may please, however remote from the colony, and settle, under circumstances that not only endanger their own personal safety, but the peace and safety of the whole white population? Please give me specific instructions respecting this matter.

Though I have addressed you at some length, I should have brought more before you, and in a better manner, but for incessant labor, care, and ill health. I have eight prisoners on hand at present, for various crimes, principally stealing horses, grain, &c.; and crimes are multiplying with numbers among the whites, and with scarcity of game with the Indians.

* * * * * * * * *

No intelligence from abroad has reached us this winter. Mount St. Helen, one of these snow-capped volcanic mountains, some 1[illegible]00 feet above the level of the sea, and eighty miles northwest of Vancouver, broke out upon the 20th of November last, presenting a scene the most awful and sublime imaginable, scattering smoke and ashes several hundred miles distance; and in the mean time immense quantities of melted lava were rolling down its sides, and inundating the plains below.

A petition started from this country to-day, making bitter complaints against the Hudson Bay Company and Governor McLaughlin. On reference to it, (as a copy was denied,) I shall only say, had any gentleman disconnected with the Hudson Bay Company been at half the pains and expense to establish a claim to the Wallamette falls, very few *would* have raised an opposition. His half bushel measure I know to be exact, according to the English imperial standard. The gentlemen of this company have been fathers and fosterers of the colony, ever encouraging peace, industry, and good order, and have sustained a character for hospitality and integrity too well established easily to be shaken.

I am, sir, sincerely and most respectfully, your humble and obedient servant,

ELIJAH WHITE,
Sub-Agent Indian Affairs, W. R. M.

T. Hartley Crawford, Esq.,
Commissioner Indian Affairs.

No. 109.

My Dear Brother: The kind letter our mission had the honor of receiving from yourself, making inquiries relative to its numbers, the character of the Indian tribes among whom its several stations are located, the country, &c., is now before me.

The questions referring to Indian character are very important, and to answer them demands a more extended knowledge of character and habits, from personal daily observation, than the short residence of six years can afford, and more time and attention than I can possibly command, amidst the numerous cares and labors of the station. I less regret this, as the latter will receive the attention of my better-informed and worthy associates of the other stations.

Concerning many of the questions, I can only give my own half-formed opinions, from limited observations, which have not extended far beyond the people of my immediate charge.

Our mission is under the patronage of the A. B. C. F. M., and was com menced in the fall of 1836, by Marcus Whitman, M. D., and myself, with our wives, and Mr. Gray. Dr. Whitman was located at Waiilatpa, among the Keyuse Indians, 25 miles east of Fort Wallawalla, a trading post of the Hudson Bay Company, which stands 9 miles below the junction of Lewis and Clark rivers, 300 from the Pacific, and about 200 from Fort Vancouver. I was located at this place, on the Clear Water or Koos-koos-ky river, 12 miles from its junction with the Lewis river, 120 miles east of Waiilatpa. Mr. Gray left the same winter, and returned to the States. In the fall of 1838, Mr. Gray returned to this country, accompanied by Mrs. Gray, Messrs. Walker, Eells, and Smith, and their wives, and Mr. Rogers. The next season, two new stations were commenced, one by Messrs. Walker and Eells at Cimakain, near Spokan river, among the Spokan Indians, 135 miles northwest of this station, and 65 miles south of Fort Colville, on the Columbia river, 300 miles above Fort Wallawalla; the second by Mr. Smith, among the Nesperces, 60 miles above this station. There are now connected with this mission the Rev. Messrs. Walker and Eells, Mrs. Walker and Mrs. Eells, at Cimakain, myself and Mrs. Spalding at this station. Dr. Whitman is now on a visit to the States, and Mrs. Whitman on a visit to the Dalles, a station of our Methodist brethren. But two natives have as yet been admitted into the church. Some 10 or 12 others give pleasing evidence of having been born again.

Concerning the schools and congregations on the Sabbath, I will speak only of this station. The congregation on the Sabbath varies at different seasons of the year, and must continue to do so until the people find a substitute in the fruits of the earth and herds for their roots, game, and fish, which necessarily requires much wandering. I am happy to say that this people are very generally turning their attention, with much apparent eagerness, to cultivating the soil and raising hogs, cattle, and sheep, and find a much more abundant and agreeable source of subsistence in the hoe than in their bows and sticks for digging roots.

For a few weeks in the fall, after the people return from their buffalo hunt, and then again in the spring, the congregation numbers from 1,000 to 2,000. Through the winter, it varies from 200 to 800. From July to the 1st of October, it varies from 200 to 500. The congregation, as also the school, increases every winter, as the quantity of provisions raised in this vicinity is increased.

Preparatory to schools and a permanent congregation, my earliest attention, on arriving in this country, was turned towards schools, as promising the most permanent good to the nation, in connexion with the written word of God and the preached gospel. But to speak of schools then was like speaking of the church bell, when as yet the helve is not put in the first axe by which the timber is to be felled, or the first stone laid in the dam which is to collect the water from whence the lumber in the edifice in which the bell is to give forth its sounds. Suffice it to say, through the blessing of God, we have had an increasingly large school for two winters past, with comparatively favorable means of instruction.

But the steps by which we have been brought to the present elevation, if I may so speak, though we are yet exceedingly low, begin far, far back among the days of nothing, and little to do with.

Besides eating my own bread by the sweat of my brow, there were the wandering children of a necessarily wandering people to collect and bring permanently within reach of the school. Over this department of labor hung the darkest cloud, as the Indian is noted for despising manual labor; but I would acknowledge, with humble gratitude, the interposition of that hand which holds the hearts of all men.

The hoe soon brought hope, light, and satisfaction, the fruits of which are yearly becoming much more than a substitute for their former precarious game and roots, and are much preferred by the people, who are coming in from the mountains and plains, and calling for hoes, ploughs, and seeds, much faster than they can be furnished, and collecting around the station in increasing numbers, to cultivate their little farms, so furnishing a permanent school and congregation on the Sabbath, from four to eight months. And as their farms are enlarged, giving employment and food for the year, I trust the school and congregation will be permanent through the year. It was no small tax on my time to give the first lessons on agriculture. That the men of this nation (the first chiefs not excepted) rose up to labor when a few hoes and seeds were offered them, I can attribute to nothing but the unseen hand of the God of missions. That their habits are really changed is acknowledged by themselves. The men say, whereas they once did not labor with their hands, now they do; and often tell me in jesting that I have converted them into a nation of women. They are a very industrious people, and, from very small beginnings, they now cultivate their lands with much skill and to good advantage. Doubtless, many more would cultivate, but for the want of means. Your kind donation of 50 hoes, in behalf of the Government, will be most timely; and should you be able to send up the ploughs you kindly proposed, they will, without doubt, be purchased immediately, and put to the best use.

But to return to the school. It now numbers 225 in daily attendance, half of which are adults. Nearly all the principal men and chiefs in this vicinity, with one chief from a neighboring tribe, are members of the school. A new impulse was given to the school by the warm interest yourself and Mr. McKay took in it while you were here. They are as industrious in school as they are on their farms. Their improvement is astonishing, considering their crowded condition, and only Mrs. Spalding, with her delicate constitution and her family cares, for their teacher.

About 100 are printing their own books with the pen. This keeps up a deep interest, as they daily have new lessons to print, and what they print must be committed to memory as soon as possible.

A good number are now so far advanced in reading and printing as to render much assistance in teaching. Their books are taken home at nights, and every lodge becomes a school room.

Their lessons are Scripture lessons—no others (except the laws) seem to interest them. I send you a specimen of the books they print in school. It was printed by ten select adults, yet it is a fair specimen of a great number in the school.

The laws which you so happily prepared, and which were unanimously adopted by the people, I have printed in the form of a small school book. A great number of the school now read them fluently. I send you a few copies of the laws, with no apologies for the imperfect manner in which they are executed. Without doubt, a school of nearly the same number could be collected at Kamiah, the station above this, vacated by Mr. Smith, the present residence of Ellis, the principal chief.

Number who cultivate.—Last season about 140 cultivated from one-fourth of an acre to four or five acres each. About half this number cultivate in the valley. One chief raised 176 bushels of peas last season, 100 of corn, and 400 of potatoes. Another 150 of peas, 160 of corn, a large quantity of vegetables, potatoes, &c. Ellis, I believe, raised rather more than either of the above mentioned. Some 40 other individuals raised from 20 to 100 bushels of various grains. Eight individuals are now furnished with ploughs. Thirty-two head of cattle are possessed by 13 individuals; 10 sheep by 4; some 40 hogs.

Arts and sciences.—Mrs. Spalding has instructed 10 females in knitting, a majority of the female department in the schools in sewing, 6 in carding and spinning, and 3 in weaving. Should our worthy brother and sister, Mr. and Mrs. Littlejohn, join us soon, as is now expected, I trust, by the blessing of God, we shall see greater things than we have yet seen. From what I have seen in the field, the school, the spinning and weaving room, in the prayer room, and Sabbath congregation, I am fully of the opinion that this people are susceptible of high moral and civil improvement.

Moral character of the people.—On this point there is a great diversity of opinion. One writer styles them more a nation of saints than of savages; and if their refusing to move camp for game, at his suggestion, on a certain day, reminded him that the Sabbath extended as far west as the Rocky Mountains, he might well consider them such. Another styles them supremely selfish, which is nearer the truth; for, without doubt, they are the descendants of *Adam*. What I have above stated is evidently a part of the bright side of their character. But there is also a dark side, in which I have sometimes taken a part. I must, however, confess that when I attempt to name it, and hold it up as a marked exception to a nation in similar circumstances, without the restraint of wholesome laws, and strangers to the heaven-born fruits of enlightened and well-regulated society, I am not able to do it. Faults they have, and very great ones, yet few of them seemed disposed to break the Sabbath by travelling and other secular business. A very few indulge in something like profane swearing. Very few are superstitiously attached to their medicine men, (who are, without doubt, sorcerers,) and are supposed to be leagued with a supernatural being, (waikin,) who shows himself sometimes in the gray bear, the wolf, the swan, goose, wind, clouds, &c.

Lying is very common; thieving comparatively rare; polygamy formerly common, but now rare; much gambling among the young men; quarrelling and fighting quite rare; habit of taking back property after it is sold is a practice quite common, and very evil in its tendency. All these evils, I conceive, can be traced to the want of wholesome laws and well-regulated society. There are two traits in the character of this people I wish to notice. One I think I can account for; the other I cannot. It is often said the Indian is a noble-minded being, never forgetting a kindness. So far as my experience has gone with this people, the above is most emphatically true, but in quite a different sense from the idea there conveyed. It is true they never forget a kindness, but after make it an occasion to ask another; and if refused, return insults according to the favors received. My experience has taught me that, if I would keep the friendship of an Indian, and do him good, I must show him no more favor in the way of property than what he returns some kind of an equivalent for; most of our trials have arisen from this source. I am, however, happy to feel that there is a manifest improvement as the people become more instructed, and we become more acquainted with their habits. This offensive trait in the Indian character I believe, in part, should be charged to the white man. It has been the universal practice of all white men to give tobacco, to name no other article to Indians when they ask for it. Hence two very natural ideas—one is, that the white man is in debt to them; the other is, that in proportion as a white man is a good man he will discharge this debt by giving bountifully of his provisions and goods. This trait in Indian character is capable of being turned to the disadvantage of traders, travellers, and missionaries, by prejudiced white men.

The last trait, which I cannot account for, is an apparent disregard for the rights of white men. Although their eagerness to receive instruction in school on the Sabbath and on the farm is without a parallel in my knowledge, still, should a reckless fellow from their own number, or even a stranger, make an attack on my life or property, I have no evidence to suppose but a vast majority of them would look on with indifference, and see our dwelling burnt to the ground and our heads severed from our bodies. I cannot reconcile this seeming want of gratitude with their many encouraging characteristics. But to conclude this subject, should our unprofitable lives, through a kind Providence, be spared a few years, by the blessing of the God of missions, we expect to see this people christianized to a great extent, civilized, and happy, with much of science and the word of God, and many of the comforts of life; but not without many days of hard labor, and sore trials of disappointed hopes, and nameless perplexities.

The number of this people is variously estimated from 2,000 to 4,000. I cannot give a correct estimate.

At this station there is a dwelling house, a school house, store house, flour and saw mills, (all of a rough kind,) fifteen acres of land under improvement, twenty-four head of cattle, thirty-six horses, sixty-seven sheep. Rev. Messrs. Walker and Eells, I hope, will report of Waiilatpa; but should they fail, I will say, as near as I can recollect, about fifty acres of land are cultivated by some seventy individuals; a much greater number of cattle and hogs than among this people. Belonging to the station, thirty-four head of cattle, eleven horses, some forty hogs; one dwelling house of Dobie's, (well finished,) a blacksmith's shop, flour mill, (lately destroyed by fire,) some forty acres of land cultivated.

Arable land.—The arable land in this upper country is confined almost entirely to the small streams, although further observation may prove that many of the extensive rolling prairies are capable of producing wheat. They can become inhabited only by cultivating timber; but the rich growth of buffalo grass upon them will ever furnish an inexhaustible supply for innumerable herds of cattle and sheep. I know of no country in the world so well adapted to the herding system. Cattle, sheep, and horses, are invariably healthy, and produce rapidly; sheep usually twice a year. The herding system adopted, the country at first put under regulations adapted to the scarcity of habitable places, (say that no settlers shall be allowed to take up over twenty acres of land on the streams,) and the country without doubt will sustain a great population. I am happy to feel assured that the United States Government have no other thought than to regard the rights and wants of the Indian tribes in this country.

And while the agency of Indian affairs in this country remains in the hands of the present agent, I have the fullest confidence to believe that the reasonable expectations in reference to the intercourse between whites and

Indians will be fully realized by every philanthropist and every Christian. But as the Indian population is sparse, after they are abundantly supplied there will be remaining country sufficient for an extensive white population.

The thought of removing these tribes, that the country may come wholly in possession of the whites, can never for a moment enter the mind of a friend of the red man, for two reasons, to name no other: 1st, there are but two countries to which they can be removed, the Grave and the Blackfoot, between which there is no choice; 2d, the countless millions of salmon which swarm the Columbia and its tributaries, and furnish a very great proportion of the sustenance of the tribes who dwell upon these numerous waters, and a substitute for which can nowhere be found east or west of the Rocky Mountains, but in herds or cultivating their own land.

Habitable valleys.—Many of the following valleys I have extensively examined; with others I am more or less acquainted from information. The river D——— shoots, putting into the Columbia river, near the Dalles, from the south, contains, without doubt, considerable tillable land. The same can be said of John Day's river, another tributary of the Columbia river, from the south, 40 miles above the former. The Utilla, another south branch, 25 miles below Wallawalla, contains a great quantity of arable land, perhaps sufficient for 150 families. The Wallawalla, another south branch, evidently contains more tillable land, including its many branches, than any other stream in the upper country. I judge that 350 families could comfortably locate on this river and its branches. I speak of white families. Probably it would sustain three times that number of Indian families, as they will always live more or less upon fish. The mission station of Dr. Whitman, among the Keyuse, is on the upper waters of the Wallawalla. The Wallawalla river proper probably may be cultivated for 30 miles; the Tusha, its principal branch, perhaps for 50 miles; the Sataksnima, a small branch, 15. On the Tshimnap, Okanakan, and some other rivers coming into the Columbia river from the west, there is said to be more or less of tillable land. The Tuckanan, a south branch of the Snake river, some 70 miles above its mouth, contains some land apparently of the best quality. It resembles a piece in this valley which has produced 1,460 bushels of potatoes to the acre. The tillable land extends up the Tuckanan 12 miles, and about 5 up the Pataha, a branch. Probably 60 families could locate here. This is a favorable location for a settlement, by reason of the advantages of the large river for transportation and rafting timber. The Paluse, putting in from the opposite side of the Tuckanan, contains some good land. This valley (Lapwai) will probably settle 250 families of Indians. Most of the land is already taken up. Yacktoin, putting in from the opposite side, 3 miles above this, will settle as many more. There are said to be several other valleys between this and the mountains, containing more or less arable land. The Grand Round is a beautiful plain, 50 miles in circuit, on the route from Fort Boisi to Wallawalla, probably all susceptible of cultivation. It is surrounded by mountains, and may be frosty. About 40 miles southeast of this is another rich valley, of some 35 miles in length, interspersed with large plats of white clover, through which a beautiful lake pours its cold waters in a rapid river, which unites with the Grand Round, and forms the Wailua, a branch of the Snake river. There are three or four other considerable streams putting into the Snake river above this, from the south, on two or three of which there are said to be large fertile plains. I know of but very little arable land in the vicinity of Salmon river. On the Shuhspalasima and Quisacksnima, two considerable branches of the Snake river, above Salmon, there is said to be some good land. Doctor Whitman writes me from Fort Hall, saying that in his journey to that place he travelled some 50 miles up the Boisi river, and thinks there is more good land on it than on any other stream with which he is acquainted in this upper country.

There is an extensive red clover plain, commencing about five miles north of this station, which I think would produce; but there is no timber, and but very little water. Doubtless, many other arable valleys will show themselves, as the country becomes more thoroughly explored.

Your humble servant,

H. H. SPALDING.

Dr. White,
Agent for Indian Affairs west of Rocky Mountains.

No. 10.

REPORT OF THE COMMISSIONER OF PENSIONS.

Pension Office, *November* 14, 1843.

Sir: In compliance with your orders, I have the honor to transmit, herewith, the following described statements:

Paper marked A contains the number of pensioners now on the rolls of the several States and Territories of the United States, except those who have been pensioned on account of naval service performed since the year 1800. This class of pensioners will be reported to the Secretary of the Navy.

The paper marked B will show the number of persons who have been added to the pension list since my last annual report, made on the 12th November, 1842.

The number of pensioners who have died, and whose deaths have come to my knowledge since the last annual report, will be found in paper marked C. This statement is necessarily very imperfect. No doubt many pensioners have died during the past year, of whose decease we have no certain information.

The number of pensioners paid within the first six months of the present calendar year is embraced in statement marked D.

Statement marked E exhibits the unexpended balances in the hands of the agents for paying pensioners at the periods when they made their last returns.

The paper marked F contains a statement of the unexpended balances of appropriations in the Treasury on the 30th September last, the amount necessary to be expended in the 4th quarter of 1843, and the amount required to be expended in the 1st and 2d quarters of 1844.

The number of invalid pensioners now on the rolls is 2,720; 102 have been added to the list during the year past, and 50 have died during that time, according to the best information we have been able to obtain. Only 2,248 have been paid since my last annual report.

Under the act of March 18, 1818, providing for revolutionary officers, soldiers, seamen, and marines, 22,240 persons applied for pensions; of that number, 20,477 were pensioned; of whom 3,509 are now on the rolls, and during the year past only 2,296 of these applied for their stipends.

Of 1,147 officers and soldiers of the continental army, who were pensioned under the act of May 15, 1828, only 379 are now borne on the rolls, and but 314 of that number have applied for their stipends during the past year.

The number of persons who have applied for pensions under the law of June 7, 1832, amounts to 35,589. Pensions have been allowed in 32,082 cases. This number has been so reduced by deaths that there are now on the rolls only 14,886, and of that number but 9,532 have been paid during the year last past.

Widows and orphans' claims, under the act of July 4, 1836, to the amount of 5,949 have been presented. Of those claims, 3,939 have been allowed. The remainder, 2,010 have been either rejected or suspended for want of proof. The number now on the rolls is 2,290, and of those no more than 1,744 have applied for their stipends since their last annual report.

Under the act of July 7, 1838, applications amounting to 9,895 have been made; and 7,855 claims have been admitted. The increase of pensions under this law arises from the liberal provisions made by the act of the 23d August, 1842, entitled "An act to amend the acts of eighteen hundred and thirty-six and eighteen nundred and thirty-eight, allowing pensions to certain widows." This act extends the provisions of the act of July 7, 1838, to every one who may hereafter become a widow, as well as those who are now widows. If the marriage took place before 1794, and the husband served six months, the widow is entitled to a pension of five years from the 4th of March, 1836, notwithstanding the husband for the same period of five years may himself have drawn a pension.

The number of applications for pensions, under the act of March 3, 1843, will probably amount to 7,000 during the ensuing year, including those who have already applied. The claims now in the office amount to nearly 5,000, and more than half the number have already been pensioned.

Under the act of July 5, 1832, entitled "An act to provide for liquidating and paying certain claims of the State of Virginia," claims to the amount of $12,033 21 have been allowed and paid during the past year. A number of claims under that law have been presented, and have not been admitted for want of proof.

Paper marked G will show the condition of the bounty land business.

I have the honor to be, very respectfully, your obedient servant,

J. L. EDWARDS,
Commissioner of Pensions.

Hon. James M. Porter,
Secretary of War.

A.

A statement showing the number of pensioners in the different States and Territories.

States, Territories, &c.	Invalid pensioners.	Pensioners under the act of Mar. 18, 1818.	Pensioners under the act of May 15, 1828.	Pensioners under the act of June 7, 1832.	Pensioners under the act of July 4, 1836.	Pensioners under the act of July 7, 1838.	Pensioners under the act of March 3, 1843.
Maine - -	156	295	10	615	104	86	264
New Hampshire -	109	284	8	522	136	141	332
Massachusetts - -	118	234	24	1,096	266	138	348
Rhode Island - -	8	19	4	243	160	36	101
Connecticut - -	60	121	17	704	225	113	286
Vermont - -	132	261	17	805	159	71	184
New York - -	544	737	97	2,947	571	296	434
New Jersey - -	22	38	8	364	120	52	71
Pennsylvania - -	337	489	62	1,248	130	58	78
Delaware - -	18	7	-	6	1	1	
Maryland - -	82	20	2	47	15	26	26
Virginia - -	122	263	29	1,042	94	104	123
North Carolina -	20	78	11	947	94	56	32
South Carolina -	22	42	7	382	31	4	1
Georgia - -	30	60	3	350	8	12	5
Kentucky - -	120	100	17	720	49	53	99
Tennessee - -	201	195	13	1,279	38	38	35
Ohio - - -	103	113	14	396	18	28	42
Louisiana - -	37	2	-	19			
Indiana - -	105	69	16	500	9	31	22
Mississippi - -	12	9	1	31			
Illinois - -	80	18	1	108	8	14	14
Alabama - -	44	27	2	230	10	4	1
Missouri - -	80	9	5	149	3	2	2
Arkansas - -	15	1	3	32	-	1	
Michigan - -	58	14	4	50	7	7	6
Florida - -	38	3	3	16	27		
Wisconsin - -	7	-	-	6			
Iowa - - -	4	-	-	1			
District of Columbia -	36	1	1	31	7	11	15
	2,720	3,509	379	14,886	2,290	1,383	2,521

J. L. EDWARDS,
Commissioner of Pensions.

PENSION OFFICE, *November* 14, 1843.

B.

Number of persons added to the rolls of the different States and Territories since the last annual return.

States, Territories, &c.	Invalid pensioners.	Pensioners under the act of Mar. 18, 1818.	Pensioners under the act of May 15, 1828.	Pensioners under the act of June 7, 1832.	Pensioners under the act of July 4, 1836.	Pensioners under the act of July 7, 1838.	Pensioners under the act of Mar. 3, 1843.
Maine	4	-	-	7	3	70	264
New Hampshire	4	-	-	4	6	115	338
Massachusetts	4	-	-	5	7	115	354
Rhode Island	-	-	-	-	5	20	102
Connecticut	1	-	-	5	11	93	291
Vermont	1	-	-	3	5	55	186
New York	21	-	-	12	30	220	442
New Jersey	-	-	-	3	14	41	72
Pennsylvania	13	-	1	6	15	36	81
Delaware	-	-	-	-	-	-	1
Maryland	2	-	-	7	2	12	26
Virginia	1	-	-	12	8	66	122
North Carolina	-	-	-	-	16	35	32
South Carolina	-	-	-	3	1	2	1
Georgia	1	-	-	1	1	6	8
Kentucky	5	-	-	8	2	41	99
Tennessee	11	-	-	4	2	18	35
Ohio	6	-	-	1	1	21	42
Louisiana	6						
Indiana	2	-	-	-	2	19	22
Mississippi				-			
Illinois	5	-	-	-	3	8	14
Alabama	-	-	-	1	1	3	1
Missouri	4	-	-	-	-	2	2
Arkansas	4	-	-	-	-	1	
Michigan	-	-	-	-	-	3	6
Florida	3	-	-	-	4	1	
Wisconsin				-			
Iowa				-			
District of Columbia	4	-	-	2	1	6	17
	102	-	1	84	140	1,009	2,554

J. L. EDWARDS,
Commissioner of Pensions.

Pension Office, *November* 14, 1843.

C.

A statement containing the number of pensioners whose deaths have been reported since the last annual return.

States, Territories, &c.	Invalid pensioners.	Pensioners under the act of Mar. 18, 1818.	Pensioners under the act of May 15, 1828.	Pensioners under the act of June 7, 1832.	Pensioners under the act of July 4, 1836.	Pensioners under the act of July 7, 1838.	Pensioners under the act of Mar. 3, 1843.
Maine - -	2	20	-	18	4		
New Hampshire -	4	17	2	58	12	-	4
Massachusetts -	6	33	4	115	29	13	6
Rhode Island - -	-	5	-	29	16	-	1
Connecticut - -	3	27	1	67	22	1	5
Vermont - -	-	4	-	16	4	3	2
New York - -	11	41	8	101	21	-	8
New Jersey - -	-	5	-	28	7	-	1
Pennsylvania - -	6	28	8	67	14	-	3
Delaware - -	-	-	-	-	-	-	1
Maryland - -	2	2	1	3	2		
Virginia - -	1	8	2	57	4	1	
North Carolina -	-	2	-	16	2		
South Carolina -	-	-	1	1			
Georgia - -	-	3	-	21	-	1	
Kentucky - -	4	2	2	50	6		
Tennessee - -	2	6	2	46	6		
Ohio - - -	3	2	2	15	1		
Louisiana.							
Indiana - -	2	7	1	14	1		
Mississippi.							
Illinois - -	-	2	-	8			
Alabama - -	-	-	-	2			
Missouri - -	-	-	-	4	1		
Arkansas.							
Michigan - -	3	-	-	3	2		
Florida.							
Wisconsin - -	-	-	-	1			
Iowa.							
District of Columbia -	1	1	-	1	2	-	2
	50	215	34	741	156	19	33

J. L. EDWARDS,
Commissioner of Pensions.

Pension Office, *November* 14, 1843.

D.

A statement showing the number of pensioners who have been paid in the first and second quarters of 1843.

States, Territories, &c.	Invalid pensioners.	Pensioners under act of March 18, 1818.	Pensioners under act of, May 15, 1828.	Pensioners under act of June 7, 1832.	Pensioners under act of July 4, 1836.	Pensioners under act of July 7, 1838.	Pensioners under act of March 3, 1843.
Maine - -	165	258	12	536	89	47	
New Hampshire -	108	188	10	477	121	53	
Massachusetts - -	113	230	27	919	214	128	
Rhode Island - -	20	7	3	200	123	23	
Connecticut - -	68	134	17	652	213	107	
Vermont - -	124	210	14	620	120	25	
New York - -	508	557	89	2,148	393	150	
New Jersey - -	19	35	7	267	83	22	
Pennsylvania - -	253	198	34	668	87	22	
Delaware - -	8	1	1	1			
Maryland - -	69	15	1	34	14	10	
Virginia - -	54	92	20	509	60	42	
North Carolina -	16	45	5	393	72	16	
South Carolina -	20	14	5	163	21	1	
Georgia - -	19	14	1	168	6	1	
Kentucky - -	105	79	15	501	89	19	
Tennessee - -	151	53	7	493	81	10	
Ohio - - -	84	88	15	270	12	8	
Louisiana - -	14	–	–	5			
Indiana - -	88	43	7	213	14	14	
Mississippi - -	3	2	–	15	1		
Illinois - -	69	14	13	87	6	2	
Alabama - -	26	5	2	69	2	1	
Missouri - -	30	4	3	87	2		
Arkansas - -	5	1	2	14			
Michigan - -	59	13	3	49	6	4	
Florida - -	22	–	1	5	7		
Wisconsin - -	4	–	–	7	2		
Iowa - - -	5	–	–	3			
District of Columbia -	29	1	–	9	6		
	2,248	2,296	314	9,532	1,744	705	

J. L. EDWARDS,
Commissioner of Pensions.

PENSION OFFICE, *November* 14, 1843.

E.

A statement showing the balances in the hands of the several pension agents, at the dates of their last returns, on account of invalid, widows', and revolutionary pensions.

Agents.	Residence.	Invalid pensions.	Act of March 18, 1818.	Act of May 15, 1828.	Act of June 7, 1832.	Act of July 4, 1836.	Act of July 7, 1838.	Act of March 3, 1843.	Remarks.
W. E. Woodruff -	Little Rock, Ark.	-	-	-	-	-	-	-	Balance due the United States, $1,922 40. Classes not designated.
B. M. Lowe -	Huntsville, Ala. -	$80 50	$782 57	$40 00	$1,739 75	$937 81	$330 00		
P. M. Butler -	Fort Gibson, Ark.	12,353 87							
James Perrine -	Mobile, Alabama -	-	780 25	354 10	3,956 39	524 00	230 00		
James H. Dearing -	Tuscaloosa, Ala. -	-	-	-	-	-	-	-	No returns.
John P. Van Ness	Washington, D.C.	49 08	1,634 00	140 00	2,492 44	252 74	1,258 40		
Horace Goodwin, 2d	Hartford, Conn. -	*314 02	5,498 22	293 71	34,088 65	10,908 81	*7,471 20	2,358 50	
Jacob Alrichs -	Wilmington, Del.	-	-	-	-	-	-	-	Balance due the United States, $1,500 90. Classes not designated.
A. M. Reed -	Jacksonville, Fl. T.	386 81	156 00	20 00	135 91	-	34 42		
A. J. Fisher -	Tallahassee, Fl. T.	144 80	296 00	353 08	558 35	150 00			
H. W. Mercer -	Savannah, Geo. -	603 23	2,370 19	99 50	13,118 66	4,003 20	*9,450 66	160 00	
John Dawson -	Springfield, Ill. -	*238 18	565 73	*18 00	1,955 02	*31 97	*516 65		
M. C. Fitch -	New Albany, Ia.	178 00	632 53	60 00	2,645 89	84 44	600 00		
J. F. D. Lanier -	Madison, Ia. -	188 95	1,692 01	770 00	10,609 86	650 86	*1,496 51		
George W. Jones -	Dubuque, Iowa T.	654 22	680 00	-	174 21	57 00			
G. W. Meriwether	Louisville, Ky. -	-	-	-	-	-	-	-	Balance due the United States, $19,371 16. Classes not designated.
Thomas G. Morgan	New Orleans, La.	1,500 67	443 03	160 00	1,296 67	2,779 93			
William Woodbury	Portland, Maine -	386 26	372 36	*22 09	9,501 69	2,539 44	*8,566 44	1,392 42	
Isaac McFarren -	Jackson, Miss. -	-	-	-	-	-	-	-	No returns.
W. C. Anderson -	St. Louis, Missouri	150 19	949 74	*813 04	10,819 57	3,628 05	*664 50	150 00	
E. P. Hastings -	Detroit, Michigan	*559 98	146 94	*50 00	*76 79	3,756 37	*918 83		
Franklin Haven -	Boston, Mass. -	5,953 33	1,301 65	2,065 90	10,368 76	9,219 27	*13,989 74	*2,902 60	

James Swan	Baltimore, Md.	-	-	-	-	-	-	-	Balance due the United States, $2,521 92. Classes not designated.
Richard Jenness	Portsmouth, N. H.	*782 33	*268 52	*43 09	4,916 58	799 47	*4,032 08	844 02	
Isaac Hill	Concord, N. H.	1,357 23	48 97	2,686 92	16,512 82	*8,044 14	*5,036 79		
John A. Stevens	New York city	280 09	3,948 27	146 86	3,093 21	8,906 17	*2,605 00		
T. W. Olcott	Albany, N. Y.	*1,769 34	13,351 83	*2,010 69	37,199 11	27,755 10	*24,275 67	14,867 54	
John Huske	Fayetteville, N. C.	1,668 51	3,160 09	410 57	7,969 01	*1,318 48	*3,796 83		
P. Dickinson	Trenton, N. J.	2,122 58	9,497 31	279 28	3,213 41	*1,106 64	*7,227 54		
James Hall	Cincinnati, Ohio	1,006 35	*2,159 94	907 27	11,418 62	3,399 14	*3,783 77	370 14	
Thomas M. Howe	Pittsburg, Penn.	-	5,146 97	1,131 64	14,865 48	507 10	915 79		
S. F. Smith	Philadelphia, Penn.	1,288 47	5,308 56	2,079 85	21,697 51	*2,896 86	*75 06		
Paris Hill	Providence, R. I.	2,034 32	5,315 58	*950 00	11,088 08	1,719 58	*11,309 88	412 00	
John C. Cochran	Charleston, S. C.	*206 54	5,290 83	*376 23	10,103 24	*1,064 35	*3,040 75		
Joel M. Smith	Nashville, Tenn.	525 72	1,933 95	195 50	15,590 08	53 55	*372 88	1,129 68	
W. K. Blair	Jonesboro', Tenn.	15 75	-	-	1,708 84	145 67	195 00		
Thomas Martin	Pulaski, Tenn.	80 50	120 32	100 00	488 73	-	1,049 22		
John T. King	Knoxville, Tenn.	668 66	3,956 09	225 76	13,656 34	276 32	*2,280 00		
John W. Campbell	Jackson, Tenn.	86 42	8 00	-	1,369 26	550 00			
J. W. Pegram	Richmond, Va.	-	-	*3,918 31	43,818 12	*148 79	*28,066 94		
A. Robinson, sr.	Richmond, Va.	5,378 96	6,851 97						
J. Steen Browne	Wheeling, Va.	98 34	4 27	90 00	3,636 28	89 50	1,678 50		
John Peck	Burlington, Vt.	224 97	546 58	2,928 27	17,089 32	1,395 76	*1,105 85		
Thomas Reed	Montpelier, Vt.	7,578 73	2,388 54	1,457 43	3,330 19	1,835 53	3,042 13		
Paraclete Potter	Milwaukie, W. T.	-	100 00	-	-	-	157 42		
Amount due United States by agents		46,995 51	85,479 55	16,995 64	346,216 04	86,924 71	9,490 88	21,679 30	
Amount due to agents by United States		3,870 39	2,428 46	8,201 45	76 79	14,606 23	140,082 07	2,902 60	
Balance due United States by agents		43,125 12	83,051 09	8,794 19	346,139 25	72,318 48	*130,591 19	18,776 70	

Amount due United States by agents, heads of appropriation not designated, $24,316 36.

Sums marked thus (*) due to the agents.

J. L. EDWARDS, *Commissioner of Pensions.*

Pension Office, *November* 14, 1843.

F.

Statement showing the unexpended balances of appropriations on hand for paying pensioners on the 30th September, 1843, *the amount required to be expended in the fourth quarter of* 1843, *and the amount required to be expended in the first and second quarters of* 1844.

Laws under which pensions are granted.	Balances of appropriations on the 30th September, 1843.	Amounts required to be expended in the 4th quarter of the year 1843.	Amounts required to be expended in the 1st and 2d quarters of the year 1844.
Invalid pensions granted under various laws, passed from 1790 to 1842 - - - - -	$93,216 42	$3,216 42	$90,000 00
Pensions under the act of March 18, 1818 - -	96,656 21	11,656 21	85,000 00
Pensions to widows and orphans, under the act of July 4, 1836 - - - - - -	67,119 98	7,119 98	60,000 00
Five years' pensions to widows, under the act of July 7, 1838, and the act of August 23, 1842, supplementary thereto - - - - - -	115 13	115 13	
Widows' pensions, under the act of March 3, 1843 -	272,197 00		

J. L. EDWARDS,
Commissioner of Pensions.

PENSION OFFICE, *November* 14, 1843.

G.

Report on the business of the Pension Office in relation to military bounty lands.

REVOLUTIONARY CLAIMS.

Number of claims for military bounty lands for services in the war of the Revolution received and examined during the year ending November 8, 1843 - - - - - - - - - 457

Abstract of the number of land warrants issued for revolutionary services, from November 12, 1842, *to November* 8, 1843.

Number of warrants.	Rank.	Number of acres.
1	Lieutenant colonel - - - - - -	450
1	Major - - - - - - -	400
6	Captains, (300 acres each) - - - - -	1,800
1	Lieutenant - - - - - - -	200
1	Ensign - - - - - - -	150
1	Surgeon - - - - - - -	400
1	Surgeon's mate - - - - -	300
19	Rank and file, (100 acres each) - - -	1,900
31	Total - - - - - - -	5,600

LATE WAR CLAIMS.

Number of claims for military bounty lands for services in the late war with Great Britain received and examined during the year ending November 8, 1843 - - - - - - - - 517

Abstract of the number of land warrants issued for services in the late war, from November 12, 1842, *to November* 8, 1843.

Warrants issued under the acts of Congress of December 24, 1811, and January 11, 1812 - - - - - - - 87
Warrants issued under the act of Congress of December 10, 1814 - 3

Total warrants - - - - - - - 90

Whereof, of the first description, 87 were issued of 160 acres each - 13,920
Of the latter description, 3 were issued of 320 acres each - - 960

Total acres - - - - - - - 14,880

Whole number of notifications and new certificates of right to locate land warrants of the late-war class issued since the passage of the act of Congress of July 27, 1842, to the 8th November, 1843, upon which warrants (no patents) had been previously granted, viz: 117 new certificates for 160 acres each, embracing 18,720 acres of land; 3 new certificates for 320 acres each, embracing 960 acres of land.

J. L. EDWARDS,
Commissioner of Pensions.

PENSION OFFICE, *November* 8, 1843.

REPORT

OF THE

SECRETARY OF THE NAVY.

NAVY DEPARTMENT, *November* 25, 1843.

SIR: I have the honor to present to you the annual report of the condition and operations of this department of the public service.

The navy at the present time consists of the following number and description of vessels: One ship of 120 guns; nine ships of the line of 90 guns each; one razee of 62 guns; twelve 52-gun frigates; one 50-gun frigate; two 48-gun frigates; eleven first class sloops of war, of 24 guns each; three 22-gun sloops; five 16-gun sloops; two sloops for store ships, 6 guns each; there are also four first class sloops on the stocks, nearly ready for launching; eleven 10-gun brigs and schooners; three 10-gun brigs and schooners, used as store ships, and one for a receiving vessel at Charleston; the steam ship Mississippi, of 12 guns; the Fulton, of 8 guns; the Princeton, (Ericson's propeller,) 12 guns; the Union, 4 guns, with Hunter's submerged wheels; the Poinsett, 2 guns; and an iron steamer, the Michigan, of 6 guns, nearly ready to launch on Lake Erie. There are likewise four small schooners employed as packets or receiving vessels. In all, seventy-six vessels of the various descriptions.

The Washington, 90-gun ship, has been broken up the last year, and the frigate Hudson is unfit to repair. The sloop Concord, 24 guns, was lost in the Mozambique channel, on the eastern coast of Africa, on the 2d of October, 1842. The commander, William Boerum, the purser, B. F. Hart, and James Davis, an ordinary seaman, were drowned when crossing the bar at the mouth of Lorango river in the captain's gig. The surviving officers and crew were conveyed, in a vessel chartered for the purpose, to Rio Janeiro, and thence to the United States.

I regret to report that the schooner Grampus has not been heard from since the 14th of March last, when she was off Charleston, South Carolina, and is supposed to have been lost, with all hands, in some of the severe gales which occurred about that time.

I have also the unpleasant duty of reporting the loss of the steam ship Missouri. This frigate departed early in August for the purpose of conveying the commissioner for China, the honorable Caleb Cushing, to Alexandria, in Egypt, *en route* to the Court of Pekin. While she was lying in the harbor of Gibraltar, into which port she had put for the purpose of replenishing her fuel, she took fire on the evening of the 26th of August, and the utmost exertions of her officers and men, during the trying and perilous event, were unavailing in extinguishing the flames; and this costly ship, an ornament to the navy, was entirely destroyed. The larger part of her officers and men have reached the United States in a ship chartered to bring them home. Her commander, Captain Newton, remains, with a portion of her force, to secure what can be recovered from the wreck. All the accounts of this disaster concur in representing the officers and crew as having made the utmost exertions to extinguish the flames; and that their conduct during this perilous period, when an explosion of the magazine was momently expected, was marked by great coolness and intrepidity. Captain Newton's official report, a copy of which is hereto appended, having been laid before you, further investigations into the causes of this loss are postponed until after his return.

The ship Franklin, requiring heavy repairs, has been laid up at the Charlestown yard, awaiting a more favorable season for prosecuting such work. The razee Independence has been ordered to the same yard for a like purpose. The Constitution frigate, at Norfolk, and the sloop of war Yorktown, at New York, are undergoing repairs, preparatory to sea service. The brig Dolphin, at Norfolk, is awaiting repairs.

Inquiries were instituted early in the summer as to the cost of building an iron steamer, of about 1,000 tons, at Pittsburg, with Hunter's submerged wheels; and in the execution of this plan a contract was entered into, early in October, with Messrs. Tomlinson & Co., for building it at a definite price per pound, and the whole cost not to exceed, in any event, $150,000, with a guarantee of speed at the rate of nine miles per hour, from her steam power, in smooth water.

Some months since, an order was given to build a small iron steamer at the Washington navy yard, on Hunter's plan, to be partly of galvanized iron; but, owing to the heavy drafts upon the appropriation for other purposes, that work is now suspended.

Instructions were also given, in April last, for the building of six sloops of war of the largest class; two of which have been launched, and the others are on the stocks, nearly ready for launching. The work on two of these has been suspended for the present. In addition to these sloops on the stocks, there are of the vessels previously named as constituting a part of the naval force the following on the stocks, viz: the Vermont and Virginia, 90 guns each, at Boston; the Alabama, 90 guns, at Portsmouth, New Hampshire; the New York, 90 guns, at Norfolk; the Santee frigate, 52 guns, at Portsmouth, New Hampshire; and the frigate Sabine, 52 guns, at New York.

The vessels afloat have been employed during the past year as follows: In the home squadron, the razee Independence, commanded by Captain Stringham until May, and since that time by Captain McKeever; the sloop Falmouth, commanded by Commander J. McIntosh up to August, when he was relieved by Commander J. R. Sands; the sloop Vincennes, commanded by Commander F. Buchanan; the sloop Vandalia, commanded by Commander W. J. McCluney, who was relieved, in consequence of ill health, in September, and succeeded by Commander J. S. Chauncey; the brig Dolphin, commanded by Commander J. D. Knight, who was relieved in October by Commander H. Bruce; the brig Somers, commanded by Lieutenant J. W. West; the brig Boxer, commanded by Lieutenant O. Bullus; the brig Bainbridge, commanded by Lieutenant Z. F. Johnston, who was relieved in September, and succeeded by Commander J. Mattison; and the schooner Grampus, Lieutenant A. E. Downes—the whole under the command of Commodore Charles Stewart. The cruising ground of this squadron extends from the banks of Newfoundland to the river Amazon, and includes the Gulf of Mexico and the Caribbean sea.

In the Mediterranean squadron, conformably with previous arrangements, an exchange of commands has taken place between Commodores Morris and Morgan.

Commodore Morris sailed from the coast of Brazil in the Delaware seventy-four, Captain C. S. McCauley, on the 19th of February, and arrived in the Mediterranean on the 9th of April, when the command of the Mediterranean squadron was transferred to him by Commodore Morgan, and the latter sailed in June with the Columbus seventy-four, Captain B. Cooper, for the coast of Brazil. The frigate Congress, Captain P. F. Voorhees, has been employed in the Mediterranean during the whole year, and is expected to sail in January next for Brazil, to interchange with the frigate Columbia, Captain E. R. Shubrick, now on that station. The sloop Fairfield, commanded by Commander A. Bigelow, during a part of the year, and subsequently by Commander S. W. Downing, has also been attached to the Mediterranean squadron. This vessel will return to the United States upon the arrival out of the new sloop of war Plymouth, now about to sail, under the command of Commander H. Henry. The sloop Preble, Commander S. B. Wilson, having finished her cruise in the Mediterranean, arrived at Boston the 31st of August, and is ready again for sea. The sloop Lexington has been employed as a store ship for this squadron. She has made one voyage with provisions and stores, and is now on her second trip.

The term of Commodore Morris's command having expired, Commodore Joseph Smith has been selected to succeed him, and has sailed for the Mediterranean in the new frigate Cumberland, Captain S. L. Breese; which vessel will be the flag ship of the squadron. Upon the arrival out of the Cumberland, Commodore Morris will return to the United States in the Delaware seventy-four.

The cruising ground of this squadron embraces the Mediterranean sea.

In the Brazil squadron, in addition to the Delaware seventy-four, there have been employed the frigate Columbia, Captain E. R. Shubrick; the sloop John Adams, Commander Conover; the sloop Decatur, Commander Farragut, which vessel returned to the United States on the 18th of February; and the schooner Enterprise, now in command of Lieutenant J. M. Watson. Commodore Morgan arrived at Rio de Janeiro, in the Columbus seventy-four, on the 2d of August, where he was met by Commodore Daniel Turner, who had been appointed to succeed him in the command of the squadron. This latter vessel is now the flag ship of Commodore Turner, but she will return to the United States upon the arrival out of the frigate Raritan, now preparing for sea, under the command of Captain F. H. Gregory. The sloop Boston, Commander Pendergrast, has sailed from Boston to relieve the John Adams.

The brig Pioneer, lately used as a receiving vessel at Baltimore, is now fitting out at Norfolk as a store ship for this squadron; Lieutenant Shaw has been ordered to command her.

The cruising ground of this squadron extends from the mouth of the river Amazon to Cape Horn, along the equator eastward to the southwestern boundary of the African station, Cape Negro; thence along the coast of Africa to the Cape of Good Hope.

The Pacific squadron, at the commencement of the year, consisted of the frigate United States, Captain James Armstrong; the sloop Cyane, Commander Stribling; the sloop Yorktown, Commander Nicholas; the sloop Dale, Commander Dornin; the schooner Shark, Lieutenant Eagle; and the store ship Relief, Lieutenant Sterett—the whole under the command of Commodore Thomas Ap C. Jones. On the 24th of January Commodore Jones was recalled, and Commodore A. J. Dallas ordered to succeed him in the command of the squadron. Commodore Dallas sailed from Norfolk in the sloop Vandalia, for Chagres, and arrived at Callao in the latter part of July. On the 8th of August he had not met with Commodore Jones, who was absent on a cruise to the Sandwich islands.

The Yorktown returned home on the 2d of August, and the Dale on the 19th of October, having on board the remains of Commodore A. Claxton, who died while in command of the squadron. The places of these vessels have been supplied by the sloop Levant, Commander H. N. Page, which sailed from Norfolk on the 2d of September, and the Warren, Commander J. B. Hull, on the 19th of October. The new frigate Savannah has been equipped for sea, and sailed on the 19th of October from New York, under the command of Captain A. Fitzhugh, to join this squadron. When she reaches the Pacific, the United States will probably return home. The store ship Erie, Lieutenant Manning, sailed from Boston on the 9th of February, with provisions and stores for this squadron. Upon her arrival at Rio, Lieutenant Manning was relieved from the command, and Lieutenant N. W. Duke ordered to succeed him. The Erie has arrived on the station. The vessels of this squadron have been ordered to return to the United States in future by way of China and the Cape of Good Hope.

This squadron cruises along the whole west coast of America, and westward from the meridian of Cape Horn, to one hundred and eighty degrees west longitude, and southward between those meridians.

The East India squadron has been composed of the frigate Constellation, Commodore Kearny, commanding the squadron, and the sloop Boston, Commander J. C. Long; which latter vessel, after visiting the most important ports and islands in the China seas and the Pacific, returned home by Cape Horn, in the month of August. The Constellation left China in the early part of the year, and was at the Sandwich islands in August last, to sail in a few days for the United States, via California and Cape Horn.

A squadron, under the command of Commodore Foxhall A. Parker, has been fitted out in the place of that commanded by Commodore Kearny. The frigate Brandywine, bearing the flag of Commodore Parker, and the sloop St. Louis, Commander H. H. Cocke, sailed from Norfolk on the 23d of May. These vessels arrived at Rio de Janeiro on the 19th of July, and sailed thence on the 5th of August. A leak was discovered in the bow of the St. Louis, which obliged her to put back to Rio for repairs; at which place she arrived on the 7th of September. It was expected that the vessel would sail again in a few days. The new brig Perry, which was launched in May, has been despatched, under the command of Commander S. F. Dupont, to join this squadron.

The African squadron is composed of the frigate Macedonian, Captain Mayo; the sloop Saratoga, Commander Tattnall; the sloop Decatur, Commander Abbot; and the brig Porpoise, Lieutenant Stellwagen—the whole under the command of Commodore Matthew C. Perry. The brig Consort is now fitting out at Boston as the store ship for this squadron.

The cruising ground of the squadron extends from the Madeira and Canary islands to the bight of Biafra, and from the coast of Africa to the thirtieth degree fo west longitude.

The following vessels have been employed on special or detached service:

The brig Truxtun, Lieutenant Upshur, sailed from Norfolk in June last for Constantinople, to bring home the remains of the late Commodore David Porter. She is daily expected to arrive in the United States.

The brig Oregon, Lieutenant (now Commander) Powell, which had been employed on a survey of the Gulf of Mexico, between Appalachicola bay and the Mississippi river, under a resolution of Congress dated the 20th of July, 1840, arrived at Norfolk the 27th of July last, the season being too far advanced to permit a further continuance of operations. The steamer Poinsett, also engaged in this svrvey, remained out; and the work has been resumed under Lieutenant R. Semmes.

The schooner Flirt, Lieutenant J. A. Davis, made a trip to Chagres in April, with a mail for the Pacific squadron, returned to Norfolk in July, and has since been despatched to Galveston, Texas.

The schooner Phœnix, Lieutenant Sinclair, has also been employed as a despatch vessel, and has recently returned from Chagres.

The brig Lawrence, built at Baltimore by contract, has been fitted out, and placed under the command of Commander W. H. Gardner, and has just departed from Norfolk, on a cruise to the Windward islands.

The sloop Marion, Commander W. M. Armstrong, returned from a cruise in the West Indies in May last, and is now ready for sea at Boston.

The small steamer Engineer has had a new boiler put in her, and is now used as a tender to the receiving ship at Norfolk.

The vessels employed as receiving ships are: the Pennsylvania, Captain Zantzinger, at Norfolk; the Ohio, Captain Hunter, at Boston; the North Carolina, Captain Dulany, at New York; the Experiment, Commander Varnum, at Philadelphia; and the On-ka-hy-e, Commander Knight, at Charleston, South Carolina. The Ontario, lately used as a receiving ship at New Orleans, and the Wave at Baltimore, have been laid up for the present at Norfolk.

Two war steamers with submerged propellers have been launched during the year—the Union and the Princeton. The Union is constructed upon the plan of Lieutenant Hunter, with submerged horizontal wheels upon the sides. The trial of this vessel was considered quite satisfactory to the department. The boilers, however, having been somewhat faulty, new ones are to be substituted, when it is not doubted by the ingenious inventor that a high rate of speed will be secured. Lieutenant Hunter's official reports are appended, as also the letter of the department on a trial of this vessel.

The Princeton, with Ericson's propellers, a vessel of most beautiful model, both for appearance and efficiency, constructed under the immediate direction and supervision of Captain R. F. Stockton, has made a highly successful experimental cruise, under his command, to and about New York, the official report of which is hereto appended.

Should these experiments, on further trial, equal the expectations now confidently entertained of them, a new era will commence in steam navigation, and particularly in the use of war steamers. Vessels that can move, at the pleasure of their commanders, against wind or tide, and whose machinery is beneath the reach of an enemy's fire, will be able easily to overcome and destroy any war vessels of the ordinary structure.

Improvements of some magnitude and much utility have been made the past year in the navy yards at Portsmouth, (New Hampshire,) Charlestown, and Gosport; and others are proposed in the different yards the ensuing year; for all the details of which, I refer you to the appended report of the chief of the bureau of the Navy Yards and Docks.

For the service of the next year, the employment of the following force is proposed:

For the home squadron: three frigates, six sloops, two steamers, and five brigs and schooners—making in all sixteen vessels. For the Mediterranean: three frigates, four sloops, one brig, and one store ship—nine vessels. For the coast of Africa: four sloops, two brigs or schooners, and one store ship—seven vessels. For the coast of Brazil: two frigates, three sloops, one brig, and one store ship—seven vessels. For the Pacific: three frigates, four sloops, two brigs or schooners, and one store ship—ten vessels. For the East Indies: two frigates, two sloops, one brig, and one store ship—six vessels. For the lakes: one steamer. For special service: the steamers Mississippi, Princeton, and Union, and the small iron steamer now building at the navy yard, Washington.

This increased force seems to be called for to afford adequate protection to our national interests embarked in our increased and growing commerce on the distant stations. The force proposed to be added to the home squadron, the cruising ground of which extends from Newfoundland to the river Amazon, in South America, seems to be necessary in guarding our own shores, in protecting the immense capital employed in the coasting trade along our whole seaboard, from the St. Croix to the Sabine, and in giving countenance and assistance to our foreign commerce with the West India islands and with the ports on the American continent.

The ships proposed to be employed are built and afloat; the officers necessary to command them are mostly in commission and under pay; the deterioration of the ships is little more while in service than when laid up in ordinary. The officers degenerate by idleness, while they are improved by service. The expense of manning and sailing these ships, of course, is greater than when laid up. But we can have competent and skilful officers, good and efficient sailors, only by a long course of active sea service That is the school in which they are taught, and in which they acquire a knowledge of their duties. To build a navy without the experience, skill, and force, necessary to sail and efficiently to manage it, in the event of a war with a maritime Power, would be in effect but adding to the force of the enemy at the nation's cost, and to the national disgrace. I have therefore no hesitation in recommending the employment of a sufficient number of vessels to require the services of every officer that can be spared from shore duty, and capable of sea service.

A slight increase of officers in the subordinate grades will be needed, to keep this force afloat. I would recommend that the number of midshipmen be kept as high as it was the beginning of this year. About ten more pursers could be beneficially employed. Several of the sailing masters being, from age or infirmity, unfit for sea service, a small increase of the number is desirable. I would recommend that the proviso limiting the number of officers of the navy, which was passed on the 4th of August, 1842, be repealed, so far as it regards the warrant officers, excepting midshipmen—the present number being insufficient for the wants of the service.

The appropriation for increase, repairs, &c., for the year 1843–'44, having been heavily drawn upon in payment of contracts made, and in the execution of plans and the completion of works in progress anterior to the commencement of the present fiscal year, it was deemed necessary, in October last, to discharge a large portion of the persons employed under this head; leaving, however, it is believed, enough funds unexpended to meet most of the outstanding demands against the department chargeable to this appropriation. The act of Congress of the 31st of August, 1842, which forbids the transfer of appropriations from one to another branch of expenditure in this department, has operated injuriously. Were these transfers permitted, it is believed that sufficient means might be found among the various unexpended balances of appropriations to pay most if not all needful outlays, in the fitting, completing, and repairing of vessels, and for payments on uncompleted contracts; and I am fully persuaded that the public interests would be promoted, were Congress to authorize these transfers early in the ensuing session.

There were several contracts made, some of them years since, for the supply of timber and various materials for the navy, which have expired without having been completed. Heretofore the department has been in the practice of extending the time for completing these contracts, where the interests of the United States have not suffered by such extension. The law of the 3d of March, 1843, requiring all contracts to be given by advertisement to the lowest bidder, seems to prohibit their further extension. There are many contractors who would have large sums due them on the completion of their contracts, for previous deliveries, being the ten per cent. reserved on the amount of those deliveries; but, in consequence of the non-extension and non-fulfilment of those contracts, these amounts remain unpaid. As the United States have suffered no loss by these delays, and as the parties expected an extension according to former usage, it appears to be a proper case for the interposition of Congress for their relief. Congress provided for analogous cases by an act dated February 10, 1832; and the passage of a similar act at this time would enable the department to effect an equitable settlement of these cases.

It is not proposed to make any contracts the ensuing year for live oak, nor for any other timber, except absolutely required for immediate use, the department intending to build only four small timber vessels during that time, and the timber for which being mostly on hand.

The docking of timber for long periods, a large portion of the time but partly covered with water, seems of very questionable utility; and there are some positive injuries arising from the practice. The timber is taken from the water, and, before allowing it time to dry, is hewn and put up for the frame of the ship. The planks are sawed from it to cover the frame. The consequence is, great shrinking and liability to warp, requiring additional expense for caulking, from the shrinkage of the planks, and greater liability to leakage. It tends also to generate dry rot; which disease, if I may so term it, appears to be a fungus, a parasitical plant, like mould, germinating in the wood, and destroying the tenacity of its fibre; which fungus would be less liable to germinate in dry than in moist wood. It is indeed doubted if it could germinate at all in perfectly dry wood.

A deficiency is apprehended in the appropriation for provisions and clothing for the current year. The sum granted by Congress for this purpose was less than that asked for by the department, and not sufficient to provide for the persons actually in service at the passage of the law. Efforts are making to bring the expenditure within the proper limits; but, owing to the recent establishment of the bureau of Provisions and Clothing, and the state of its accounts with the ships on distant stations, the department has not yet been able to learn the precise condition of its expenditures.

About $15,500 worth of provisions, clothing, and small stores, have been lost by the burning of the Missouri, the wreck of the Grampus, and the wreck of a freight vessel at Port Praya.

The estimate from the bureau of Ordnance and Hydrography is some $520,000 more than the sum asked for last year. Of this, about $160,000 is to pay for outstanding contracts made by the Board of Navy Commissioners some years since, and yet uncompleted. It includes also an estimate for a sufficient number of powder tanks for all the ships and brigs of the navy, launched or not launched, that are not now provided with them. It likewise includes an estimate for 200 cannon of large size.

In the bureau of Yards and Docks, the estimate for the improvement of yards is about $180,000 over that of last year. The estimate for coal is on the supposition that each steamer will employ steam power four months in the year; and the sum asked for is a very liberal allowance, even for this length of service.

In the plot of ground on which the navy hospital at Chelsea, Massachusetts, stands, there are many acres more than are of any use for the purposes of that establishment, and producing no income. If this were sold, a handsome sum might be added to the hospital fund, and an income be received from it. I therefore respectfully recommend that Congress authorize the sale of so much of this land as will not be needed for the hospital purposes; and I would further suggest that the Navy Department be clothed with authority to invest the navy hospital fund, now amounting to $200,000, and yielding no income, in some safe and productive securities.

A resolve was passed by the late Congress, appropriating $4,000 toward establishing an agency in the State of Kentucky, and one in the State of Missouri, for the purchase of American hemp for the use of the navy. An agent was appointed on the 1st of July last for the State of Kentucky; and, in obedience to directions, he visited the United States ropewalk at the Charlestown navy yard, for the purpose of gaining information as to the kind and quality of water-rotted hemp used in the navy, and the mode of testing its strength. The appropriation for this branch of the naval service (increase and repair) having been mainly expended on other contracts, the department has recently directed the agent to make no purchases; and, in this state of the appropriation, it has not been thought expedient to appoint any agent for the State of Missouri.

Mr. Von Schmidt, an intelligent gentleman, well acquainted with the culture of hemp in Russia and in this country, has been employed, by the direction of the department, the last season, on the culture and preparation of hemp in this vicinity. He is now engaged in constructing a machine for breaking it, and separating the fibres from the stalks, without rotting. Should he succeed, of which there is a fair promise, a great saving of labor will be made; and the hemp thus prepared will be much superior in quality and strength to hemp prepared by the old method of rotting. Mr. Von Schmidt's report is appended. He has also been employed to translate the pamphlet on the culture and preparation of hemp, published at Odessa, in Russia, and to which the attention of Congress was invited by a communication from this department, dated the 1st of March, 1843.

The expense of this translation, for which there is no appropriation, is $300. The translation is submitted with this report.

I respectfully suggest a modification of the ration, so as to dispense with the spirit portion now allowed. That the frequent and habitual use of ardent spirits injuriously affects the human system, is a truth believed to be now generally understood and admitted by all intelligent physiologists. Its evil influences are not less on the moral than on the physical condition of man. A large proportion of the punishments inflicted upon the seamen is for drunkenness, or the immediate effects of drinking ardent spirits—insubordination in its various forms. In abolishing the spirit ration, punishments and disease will be less frequent, and the whole moral and physical condition and character of the men will be improved. I therefore cannot too strongly recommend that no spirits be allowed in the rations of those who enlist in future, and that the right of commuting the spirit ration for money be continued to those already enlisted.

Measures are in train for establishing a more perfect system of accounts for the naval storekeepers, by which a more rigid and effective responsibility will be enforced in keeping and disposing of the public property in the yards. In the execution of this plan, an additional clerk at each navy yard is necessary. The sum estimated for each clerk is eight hundred dollars per annum; and the services to be rendered will vastly more than compensate for the outlay.

Great expense has been incurred at times by alterations in the inboard arrangement of ships without the authority of the department. The cost of such alterations thus made has been directed to be charged in future to the officer making them.

Navy agents have been directed to pay no bills except from funds in hand belonging to the appropriation to which the bills are chargeable. By this arrangement the department will keep a better knowledge and more perfect control over the condition of the appropriations.

The allowance of additional pay to officers performing the duty of a higher grade is often a subject of contention and perplexity, and is liable to abuses. The utility of such allowances is somewhat questionable; but if expedient to continue them, the law might be beneficially modified. It should define more accurately what constitutes a higher command, and perhaps, also, provide that no extra pay be allowed, unless expressly stipulated in the order directing the officer to perform such duty.

Pursuant to the act of Congress of March 3, 1843, Captain Rousseau, Commander Adams, and Lieutenant Stephen Johnston, have examined and surveyed the harbor of Memphis, in reference to its capability for "a naval depot and yard for the building and repairing steam ships and other vessels of war at that place." The report of these officers has been received, and accompanies this.

An appropriation of one hundred thousand dollars was made at the last session of Congress for the purpose of building a floating dry dock, sufficiently large to raise a second class frigate, on such plan as the Secretary of the Navy should approve, to be used at Pensacola. After various inquiries, the examination of various plans, and the consideration of the offers of persons proposing to build it, no plan was presented on which a suitable dock could be built within the limits of the appropriation, and the department did not feel authorized to enter into a contract requiring a larger expenditure than the sum appropriated for the purpose. The plan presented by S. D. Dakin, for a sectional dock, had the preference of the department; but one of a suitable size, with the machinery necessary to work it, could not be built within the sum appropriated. A detailed report on the subject, with an estimate of the cost of such a dock, to be used as the elevating or floating power, and connected with a level rail track, by which ships can be taken upon the land with ease and safety, will be submitted in another communication, when all the necessary facts and calculations shall have been received from the persons having that subject in charge. Mr. Sanger, the engineer of the bureau of Yards and Docks, in compliance with the resolve of Congress, is making the necessary examinations as to the practicability of using the Croton water as an elevating power for a dock at New York. When this survey shall have been completed, the department will report upon that subject.

In the estimates are included the cost of the apparatus for a laboratory at the Washington navy yard, and for the employment of a chemist and pyrotechnist. It is believed that great advantages may be derived by employing scientific persons in testing the quality of copper and various other materials, and in the preparation of many articles used in the service, which have heretofore been found, when used, of inferior quality. It is highly important that a competent person be employed in the preparation of fuses, rockets, and other fireworks indispensable in the naval service. So deficient is the service in this knowledge, that the fuses necessary for its use are obliged to be purchased.

The medical department of the naval service requires talent, education, and moral worth, properly to fill it, of as high order as in other branches of that service; but the surgeons and assistant surgeons have no military rank. A modification of the law, by which medical officers in the naval service shall be entitled to rank in a manner similar to that prescribed in the army, might be beneficially made.

Commander Wilkes, with the officers under him, has been assiduously engaged in preparing the hydrographical results of the exploring expedition for publication. Before the end of the year, forty plates of charts will be ready for publication, comprising upwards of seventy general and local surveys of the groups and islands of the Pacific. Many more are ready to be given out to engrave.

Commander Wilkes reports that the narrative preparing by him, under the authority of Congress, will be ready for the press previous to March next.

The naturalists and others are also employed in the description and arrangement of the several branches of natural history. For their pay, and that of the persons necessary in the keeping and attendance of the hall, and to complete the arrangements, a small appropriation is asked. The whole is making as rapid an approach to completion as can be expected in such duties.

The report and estimate of Commander Wilkes is submitted herewith.

In the general estimates for the half current year ending June 30, 1843, and the fiscal year ending June 30, 1844, fifteen thousand dollars are required "for the erection of the building for depot" of charts and instruments. That sum is embraced in the amount appropriated for enumerated contingent expenses in the act of 3d of March last; but the "erection of building for depot" is not specified therein, and the law prohibits the application of any part of the amount appropriated for "other objects" than those enumerated; therefore, legislation is necessary to perfect and legalize the application of the fifteen thousand dollars to "the erection of building for depot," the object for which the amount was specified in the estimates, and for which purpose it is applied.

I append the report of the superintendent of the building, in which he asks for an appropriation of twenty thousand dollars, for grading the grounds, &c. The house he has estimated for would be convenient, but is not deemed essential at this time.

It is proper to remark that this building is adapted, in its form and structure, not only for a depot of charts and instruments, but for an astronomical observatory and for other scientific investigations.

It cannot but be gratifying to you to learn how great an interest has been evinced by the learned societies and scientific men of Europe, as well as at home, upon the establishment of an institution by the Government, in which a portion of the duties will be the advancement of science. Great liberality of feeling was expressed towards the officer sent abroad for the purchase of instruments; and, as another mode in which their great satisfaction was shown, extremely valuable presents of books were made to its library through him.

Contracts awarded to the lowest bidder have been made the last year for some heavy ordnance; but the contractors have failed to fulfil their engagements, and consequently the guns have not been procured. The policy of giving contracts for supplies of such importance to the lowest bidder, in preference to known and experienced founders, is of questionable utility. But such is the present requirement of the law. The lowest priced guns are not always the cheapest. The loss of lives during the last war, and since that time, from the bursting of guns on board our ships, is said to have been nearly as great as the loss from the enemy's shot. Ammunition as well as guns is by law to be procured in like manner from the lowest bidder. Powder made from the nitrate of soda, in lieu of nitrate of potash, appears as well, and is about as strong when first made, as that manufactured from saltpetre, but deteriorates daily, and is nearly worthless in a few months; and yet this inferior ingredient cannot be detected except by a chemical analysis. True economy, hence, would seem to dictate that a different rule than that of giving contracts to the lowest bidder, regardless of the skill and character of the manufacturers, should prevail in procuring the ordnance, arms, and ammunition, for the service.

A series of experiments have been made at the Washington navy yard by Professor Johnson, to test the qualities of coal of different kinds, a preliminary report of which is appended. Charles Reeder, Professor Johnson, and Dr. Thomas P. Jones, have been engaged in making experiments upon safety valves for preventing explosions in steam boilers. Professor Johnson has also made a series of experiments to test and improve the strength of iron, upon the principle of thermotension. After these several experiments shall have been completed, reports will be made concerning them.

It has been found that the force allowed by the act of the 31st of August, 1842, is inadequate for the performance of the duties required in an efficient administration of this department. An estimate has therefore been submitted for three additional clerks for the office of the Secretary of the Navy; three for the bureau of Construction, Equipment, and Repairs; two for the bureau of Provisions of Clothing; and one to take charge of all the books and papers of the late Board of Navy Commissioners and the library of the department.

The estimates, from the different bureaus and the commandant of the marine corps, of the sums that will be required for the proposed service of the coming year, are sent with this report.

All of which is respectfully submitted.

DAVID HENSHAW

To the PRESIDENT OF THE UNITED STATES.

Schedule of papers accompanying the report of the Secretary of the Navy.

No. 1. Estimate for the office of the Secretary of the Navy and the several bureaus.
No. 2. General estimate for the navy and marine corps.
No. 3. Report from the bureau of Yards and Docks.
No. 4. Estimates in detail from the bureau of Yards and Docks.
No. 5. Estimates in detail from the bureau of Ordnance and Hydrography.
No. 6. Estimates in detail from the bureau of Construction, Equipment, &c.
No. 7. Estimates in detail from the bureau of Provisions and Clothing.
No. 8. Estimates in detail from the bureau of Medicine and Surgery.
No. 9. Estimate for the marine corps, in detail.
No. 10. Report of the Commissioner of Pensions, with estimate.
No. 11. Report of the Fourth Auditor, with statement of expenditures of navy pension fund.
No. 12. List of deaths in the navy.
No. 13. List of resignations in the navy.
No. 14. List of dismissals in the navy.
No. 15. Report of Lieutenant W. W. Hunter.
No. 16. Report of Captain R. F. Stockton.
No. 17. Report of survey of Memphis.
No. 18. Report on cultivation of hemp.
No. 19. Report of Commander C. Wilkes.
No. 20. Report of Lieutenant J. M. Gilliss.
No. 21. Report of Captain J. T. Newton.
No. 22. Report of Professor W. R. Johnson.

*No. 1.

General estimate of the amount required for the support of the office of the Secretary of the Navy, and of the bureaus of the Navy Department; also, for the contingent expenses of the southwest Executive building, for the year ending 30*th June*, 1845.

Offices and bureaus.	Salaries.	Contingent.	Total.
Office of the Secretary of the Navy - -	$19,350	$2,000	$21,350
Submitted - - - - - -	8,400	300	8,700
Bureau of Yards and Docks - - -	10,400	550	10,950
Bureau of Ordnance and Hydrography -	7,400	520	7,920
Bureau of Construction, Equipment, &c. -	9,100	500	9,600
Submitted - - - - - -	3,335	-	3,335
Bureau of Provisions and Clothing - -	7,100	650	7,750
Submitted - - - - - -	2,938	-	2,938
Bureau of Medicine and Surgery - -	5,200	600	5,800
Southwest Executive building - -	1,345	2,825	4,170
Submitted - - - - - -	600	-	600
	75,168	7,945	83,113

Estimate of the sums required for the support of the office of the Secretary of the Navy for the year ending 30*th June*, 1845.

Salary of the Secretary of the Navy - - - -	$6,000
Clerks and messengers - - - - - - -	13,350
	19,350
For contingent expenses, viz:	
For blank books, binding, and stationery - - - - -	$800
For extra clerk hire - - - - - - -	4,000
For printing - - - - - - - -	300
For labor - - - - - - - -	350
For miscellaneous items - - - - - - -	350
For newspapers and periodicals - - - - - -	200
	6,000
Submitted:	
For expense of translating a work, on the cultivation and preparation of hemp, from the Russian language - - -	$300
For three additional clerks for the office of the Secretary of the Navy, at $1,000 - - - - - - -	3,000
For one clerk, to be placed in charge of all the papers, records, and correspondence, of the late office of the Navy Commissioners, to properly arrange and index the same for convenience of reference, together with such other duties necessary to be assigned him by the department - - - - - -	1,400
	4,700

Estimate of sums required for the expenses of the southwest Executive building for the fiscal year ending on the 30th June, 1845.

Superintendent	$250
Three watchmen	1,095
Labor	325
Fuel and light	1,350
Miscellaneous items	1,150
	4,170

Submitted:

An additional sum of $200 each for the watchmen, in consideration of their being required to watch day and night, to wit: From 3 o'clock, P. M., until relieved by the messengers of the department, about 8 o'clock, A. M. When their salaries were formerly fixed at $500, they were required to watch only from sunset to sunrise.

Estimate of the sums required for the support of the bureau of Yards and Docks for the year ending the 30*th June,* 1845, *under act of Congress approved* 31*st August,* 1842.

Commodore L. Warrington, chief of bureau	$3,500
William G. Ridgely, chief clerk	1,400
Stephen Gough, clerk	1,000
William P. Moran, clerk	800
William P. S. Sanger, engineer	2,000
George F. De la Roché, draughtsman	1,000
Charles Hunt, messenger	700
Contingent expenses	550
	10,950

L. WARRINGTON,
Chief of Bureau.

BUREAU OF YARDS AND DOCKS,
November 21, 1843.

Estimate of the sums required for the support of the bureau of Medicine and Surgery for the year ending 30*th June,* 1845, *under the law of the* 31*st of August,* 1842.

For the salary of the chief of the bureau	$2,500	
For the salaries of two clerks and messenger	2,700	
		$5,200
Contingent expenses.		
Blank books and stationery	400	
Miscellaneous items	200	
		600
		5,800

NAVY DEPARTMENT,
Bureau of Medicine and Surgery, November 29, 1843.

No. 2.

General estimate of the amounts required for the support of the navy for the year ending June 30, 1845. (For particulars, see detailed estimates from the several bureaus.)

For pay of commission, warrant, and petty officers, and seamen, including the engineer corps of the navy, viz:		
For vessels in commission - -	$2,999,684 00	
For navy yards and shore stations -	497,742 00	
For officers on leave or waiting orders -	225,000 00	
		$3,722,426 00
For pay of superintendents, naval constructors, and all the civil establishments of the several yards - -	-	88,320 00
For provisions for the navy, including transportation, cooperage, and other expenses - - - - -	-	1,027,037 00
For surgeons' necessaries and appliances for the sick and hurt of the navy, including the marine corps - -	-	41,900 00
For the increase, repair, armament, and equipment of the navy, and wear and tear of vessels in commission -	-	1,900,000 00
For ordnance and ordnance stores, including all incidental expenses and liabilities on outstanding contracts -	-	620,885 00
For books, maps, charts, and instruments, binding and repairing the same, and all expenses of the hydrographic office - - -	-	43,200 00
For improvements and necessary repairs of navy yards, viz:		
At Portsmouth, N. H. - -	44,220 60	
At Charlestown, Mass. - -	121,201 53	
At Brooklyn, N. Y. - -	81,118 00	
At Philadelphia, Pa. - -	34,615 16	
At Washington, D. C. - -	46,230 00	
At Gosport, Va. - -	124,680 00	
At Pensacola, Fla. - -	50,137 26	
		502,202 55
For necessary repairs of hospital buildings and their dependencies, viz:		
At Charlestown, Mass. - -	1,700 00	
At Brooklyn, N. Y. - -	1,500 00	
At Washington, D. C. - -	250 00	
At Norfolk, Va. - -	4,000 00	
At Pensacola, Fla. - -	5,000 00	
At naval asylum, Philadelphia -	7,090 00	
		19,540 00

ESTIMATE—Continued.

For necessary repairs of magazines at—		
Charlestown, Mass. - -	$200 00	
Brooklyn, N. Y. - -	200 00	
Washington, D. C. - -	200 00	
Norfolk, Va. - - -	750 00	
		$1,350 00
For contingent expenses, as per estimate of bureau of Yards and Docks -	175,000 00	
Construction, &c. - - -	213,800 00	
For storage and rent; travelling expenses of officers and transportation of seamen; house rent to pursers, when duly authorized; funeral expenses; commissions, clerk hire, office rent, stationery and fuel to navy agents; premiums and incidental expenses of recruiting; apprehending deserters; per diem allowance to persons attending courts martial and courts of inquiry, or other services authorized by law; compensation to judge advocates; printing and stationery of every description; pilotage and towing of vessels of war; assistance rendered to vessels in distress; postage of letters on public service -	111,200 00	
		500,000 00
For contingent expenses for objects not enumerated - - - - -	-	5,000 00
For coal and other fuel for steam vessels	-	84,080 00
Total - - - -	-	8,555,940 55
Marine corps:		
For pay of officers, non-commissioned officers, musicians, privates, and servants serving on shore, and subsistence of officers - - -	-	$200,815 60
For clothing - - - - -	-	43,635 00
For provisions - - - - -	-	45,011 95
For fuel - - - - -	-	16,274 12
For military stores - - -	-	2,800 00
For transportation - - -	-	8,000 00
For repair of barracks - - -	-	6,000 00
For contingencies - - -	-	17,980 00
Total - - -	-	340,516 67

Estimate of the amount required for the pay of officers of the navy on leave of absence or waiting orders for the year ending June 30, 1845.

Rank.	Rate of pay.	Amount.
30 captains - - - - - - -	$2,500	$75,000
36 commanders - - - - - -	1,800	64,800
50 lieutenants - - - - - -	1,200	60,000
5 surgeons, average - - - - -	1,400	7,000
10 masters, superannuated - - - -	750	7,500
		214,300
Add for *difference of pay* for officers on occasional temporary duty, such as courts martial, courts of inquiry, boards of examination, &c. - - -	-	10,700
		225,000

No. 3.

BUREAU OF YARDS AND DOCKS,
November 24, 1843.

SIR: I have the honor to present to you, conformably to the directions contained in your letter of the 1st September, the estimates for the improvements of the navy yards; for the repairs of all buildings which require them, and for the support of the establishments belonging to or connected with them, including the civil as well as naval officers attached to them. I also forward the estimates for the improvement, repair, and support of the several naval hospitals; and also for the preservation and repair of the magazines. Those for the receiving vessels, recruiting stations, and ordinary of the several yards, accompany them.

The amount called for by me for the year commencing on the 1st July, 1844, and ending on the 30th June of the subsequent year, is $1,256,274 55, being $200,525 84 more than was called for the twelve months beginning on the 1st July of the present year. The cause of this is to be sought and found, in addition to the sum for contingent, which has been found to be considerably short of the supposed actual expenditure, in the recommendation of a larger portion of improvements, and a very small increase in the salaries of superintendents. Of the first, the increase is $85,000; of the second, $167,234 09; and of the last, $14,600.

The deficiency of a proper police for the yards, as watchmen, to guard the public property, and their consequent increase, causes the first item to be swelled to a larger amount than that of the last year; and a belief that works of great importance to the public interest may be prosecuted to advantage within the period for which the estimates are made produce the increase of the second item.

Our several yards, from Portsmouth, New Hampshire, to Norfolk, inclusive, have so many demands on them, for the proper arrangement of the building, repairing, equipping, and storage branches of the service, that it becomes a measure of sound economy, at a time when wages and materials are lower than they have been for years, that a more rapid progress should be made in buildings, wharves, and other conveniences, to meet the present probable and increasing demands of those branches. The improvements are making in strict accordance with the plans of the various establishments approved in 1828 by the Executive, and furnish almost daily evidence of the forecast and discretion which marked their preparation.

It may be proper to state, a little more particularly and in detail, the works at the several points, which go to form the aggregate of these calculations, and put you in possession, in a brief manner, of what is going on now, and is contemplated at each.

The yard at Portsmouth, New Hampshire, being the most northern, I shall begin with it, and continue the enumeration to Pensacola, in rotation.

At this yard, after completing a variety of works within the past year, which have been in hand for longer or shorter periods, to the amount of $101,508 35, we propose to continue the construction of the quay walls, begun some time back, which is a most important matter, and almost indispensable to the security of the yard, and the convenience of the public ships resorting to it. This is the principal work to be carried on there, the rest consisting of filling up low places, covered or partly covered by water, of the repairs of buildings, and for the convenience of embarkation and disembarkation of stores and supplies.

At Boston, it is in contemplation to erect one wing of a large house for the deposite of stores of all kinds, and for their preservation. It is intended to have this completed gradually, and perhaps two or three years may elapse before it is finished. It will be built in such a manner as to suffer nothing by the delay. An additional story to the ropewalk is proposed, and it is much wanted, as in it we may not only store the rough and prepared hemp in a secure place, but have it always adjacent to the spot on which it is converted into rope. A rigging and sail loft, or another range of commodious apartments for storage, will also be thus added to the yard. Another wharf between two of the ship houses; and an additional height to a part of the boundary wall, are also much wanted. Machinery for the smithery and block shop, with the requisite tools, form a considerable item, and, with the amount necessary to keep in repair all the buildings, wharves, and slips, will make up the whole of the improvements which are designed to be the result of this estimate.

At New York, a new smithery, to be commodious and adapted to the increasing operations of the yard, with a cob wharf around the mud flats on one side of the yard, will form the principal items of the sum asked. It is intended to finish, with the sum asked for the wharf, about one-half of the whole, leaving the remainder to be carried on subsequently. It is of great consequence to commence soon, as by it we shall be relieved of the expense and labor of clearing, by machinery, the channel, and with what may be taken up may add considerably to the solid surface of the yard—a thing very desirable, as room is much wanted. The other works to be accomplished are a stable, a building for steam engines, and all the repairs of all edifices, &c., which may require it, within the period allotted. I consider this a proper time and a fit place to state, more formally than I have hitherto done, that a plan of this yard has been, by my order, made within the year by the civil engineer of the navy, and will, I believe, be, on examination, found to be as well adapted to the wants of the establishment, and as economically as well as methodically arranged, as those of the other yards. For want of such a plan, no improvements commensurate with the importance of this yard have been undertaken; and, consequently, the little that has been done has been of a more temporary nature than was desirable. In a very short time, I shall have the honor of laying it before you, for your decision, and for such alterations as may be suggested by you.

At Philadelphia, the principal, and, I may add, the whole of the work to be undertaken, with the exception of the repair of buildings, are those for extending the wharves, and for the erection of piers at their ends, to serve as sluices. The rapid manner in which the silt is deposited, by the downward current of the Delaware, at the extremities of the present wharves, has compelled us to extend them several times, to enable us to launch the several vessels which have been built; and it is confidently expected that, when the work of the kind now in progress is completed, we shall have no further occasion for such an outlay. This has been commenced, and is going on in a workmanlike and skilful manner.

At Washington, the works to be undertaken, with the amount asked for, are for the repair and raising of some of the wharves; machinery for the engineer's branch of business; extension of works in the forges and anchor shops; and for improvements in the latter—such as forge hammers, forges, and blowers; a house for a galvanizing apparatus; a small addition to the houses of three of the officers; and repairs of the buildings generally—make up the remaining items at this yard. Several important buildings are necessary to this yard, to enable it to prepare, with care, despatch, and economy, the various metallic articles of equipment, so much wanted by our vessels. Its contiguity to the iron and coal beds of this portion of the country, and the commencement of works for the preparation of water tanks, of chain cables, of camabooses, of anchors, and of all other such requisites, give to it advantages, which it would seem proper to extend as rapidly and as widely as the sums to be placed at our disposal will admit. If the means, in buildings and machinery, were prepared, we could constantly employ, with great benefit, a force of four or five hundred men, in the manufacture of the above-mentioned principal articles, and various others of less cost, though of not less demand.

At Norfolk, the continuation of the line of quay walls, and the completion of the wet basin, commonly called the timber dock, form two of the principal works included in this estimate. They are both much wanted; the first to complete the east front of the north section of the yard, and to give accommodation to vessels; and the second, to fill out the plan of that portion of the yard, for which large improvements are contemplated. It is intended that vessels of an easy draught of water shall enter this basin, for the discharge and embarkation of stores, &c., in addition to the convenience of landing timber and other bulky articles. Upon this basin the mast house is placed; and as soon as the former is finished, the masts will be floated into the building, or out of it, as occasion may require, with great ease, and at a very small expense, compared to that which would be encountered by hauling them on the land. The boat house is also placed on it, and, by means of a railway, possesses the advantage of a quick and easy transportation, for all its materials and productions. To build an additional storehouse; to finish another; and raise the roof of a long range of buildings on the north side or front of the yard, so as to enable it to answer the purpose designed for it on the plan of the yard, and to give, what is much wanted, good accommodation for fitting and storing rigging, form three other items of consequence to this establishment. A bridge across the timber dock, the repairs of all buildings, and the completion of a building slip laid down on the plan of the yard, and on which the sloop Jamestown is building, form the remaining items. All these works, it is considered, are very necessary; and it is believed to be very proper to urge them forward as fast as comports with a due regard for their proper erection and completion, as the ease of approach and the mildness of the climate unite to make this a most important port for equipment at all times, but most particularly in winter.

I come now to the last yard, that of Pensacola—and have to observe, that the erection of four houses for officers, the building of a storehouse, and of a floating water tank, by which to convey expeditiously to vessels in want a supply of water, with a provision for the general repairs of all works requiring it, constitute the objects for which the estimate is made. Houses for officers are there more indispensable than at any other yard, as there are no means of obtaining accommodation near the yard, or, rather, so near as to enable those requiring it to give as much of their attention as is proper to a due discharge of their duty. It would be desirable to have a supply of water brought to this yard by iron pipes; but as it was estimated for last year, and omitted in the appropriation bill, I have not deemed it proper to submit it again; and the more particularly, as it would seem to be a very large sum for such a purpose. The distance, however, which it would require to be brought, and the difficulty of preparing the source for a full supply, would be the causes of the great outlay. I have called on the commandant of the yard for a statement, in detail, of the expense, of the quantity which may be afforded daily, and of the capacity of the source whence the water is supplied, which will be submitted hereafter, should it be deemed by you of such importance as to render a special application for the amount necessary.

Presuming it would be satisfactory to you to know what has been doing since the last report, in the way of improvements, and the amount expended at the different points, I subjoin a statement of those which have been completed since October 1, 1842, and the sums expended on them.

At Portsmouth, New Hampshire, wharves Nos. 1, 2, and 3, a permanent building slip for a frigate, a portable bridge, and a dock for soaking knees, have been finished, at a cost of $101,508 35.

At Boston, a ship house and a steam engine for the ropewalk have been completed, in addition to several less costly but useful works, and the amount expended is $62,256 37.

At New York, a few small works only have been erected, and those but to serve the immediate wants of the establishment; and their amount is $29,214 35. The cause of this small expenditure for such purposes is owing to the hitherto unsettled state of the question relative to its continuance at that point, and the kind of works which should be considered proper. As it seems now to be decided that the yard will be suffered to remain where it is, it is hoped that buildings and other proper works will be erected and put up in it, commensurate with its advantages and importance.

At Washington, a small amount only has been laid out on finished works, which are the foundation of the shears, and a machine for proving, by hydraulic power, the chain cables of the navy. The total is $12,487 31.

At Norfolk, several important works are in progress, as quay walls, wharves, storehouses, &c.; but, as none of these have been completed, the sum of $11,050 only has been laid out on finished works, which are of considerable use, but of little magnitude.

At Pensacola, several works have been finished, but of no other importance than as affording accommodation to stores and convenience to the sick. The amount expended thereon is $23,041 36.

In the commencement of my report, I stated that one or two items of the present estimates had been increased beyond the amount called for, on account of the same items for the last year.

It is proper to state, in connexion with that circumstance, that there are others which have been reduced below similar items in the last year, viz: the item of pay is less by $64,134; that for hospitals by $1,574 25; and that for magazines by $600—making an aggregate of $66,308 25.

I have the honor to be, very respectfully, your obedient servant,

L. WARRINGTON,
Chief of Bureau.

Hon. David Henshaw, *Secretary of the Navy.*

No. 4.

Schedule of the papers accompanying the report of the chief of the bureau of Yards and Docks to the Secretary of the Navy, November 21, 1843.

Y. and D.—A.—General estimate.

Y. and D.—No. 1.—Receiving vessels in detail, being part of the first item in the general estimate.

Y. and D.—No. 2.—Recruiting stations in detail, being part of the first item in the general estimate.

Y. and D.—No. 3.—Officers and others at yards and stations, in detail.

Y. and D.—No. 4.—Improvements and repairs of navy yards.

Y. and D.—No. 5.—Statement showing the sums which make up the first and second items in the general estimate.

Y. and D.—A.

GENERAL ESTIMATE.

Estimated amounts that will be required for the naval service for the year ending 30th June, 1845, so far as coming under the cognizance of the bureau of Yards and Docks, in addition to the unexpended balances which may remain in the Treasury on the 1st of July, 1844.

1st. For the pay of commission, warrant, and petty officers - - - - - [See paper marked Y. and D.—No. 5.]	-	$469,862 00
2d. For the pay of superintendents, naval constructors, and all the civil establishments at the several yards and stations - [See paper marked Y. and D.—No. 3, for detail.]	-	88,320 00

ESTIMATE—Continued.

3d. For the improvement and necessary repairs of navy yards, viz:		
[See paper marked Y. and D.—No. 4.]		
Portsmouth, New Hampshire - -	$44,220 60	
Boston - - - - -	121,201 53	
New York - - - - -	81,118 00	
Philadelphia - - - - -	34,615 16	
Washington - - - - -	46,230 00	
Gosport - - - - -	124,680 00	
Pensacola - - - - -	50,137 26	
		$502,202 55
4th. For hospital buildings and their dependencies viz:		
Charlestown - - - -	1,700 00	
Brooklyn - - - -	1,500 00	
Washington - - - -	250 00	
Norfolk - - - -	4,000 00	
Pensacola - - - -	5,000 00	
Philadelphia asylum - - -	7,090 00	
		19,540 00
5th. For magazines, viz:		
Charlestown - - - -	200 00	
Brooklyn - - - -	200 00	
Washington - - - -	200 00	
Norfolk - - - -	750 00	
		1,350 00
6th. For contingent expenses that may accrue for the following purposes, viz:		
For the freight and transportation of materials and stores for yards and docks; for printing and stationery; for books, maps, models, and drawings; for the purchase and repair of fire engines, and for machinery of every description; for the repair of steam engines in yards; for the purchase and maintenance of horses and oxen; for carts, timber wheels, and workmen's tools of every description; for postage of letters on public service; for coals and other fuel; for candles and oil for use of navy yards and shore stations; for incidental labor at navy yards, not applicable to any other appropriation, and for no other object or purpose whatever - - -	-	175,000 00
		1,256,274 55

L. WARRINGTON, *Chief of Bureau.*

BUREAU OF YARDS AND DOCKS,
November 21, 1843.

Y. and D.—No. 1.

RECEIVING VESSELS.

Estimate of the number and pay of officers and others, required for the receiving vessels for the year ending June 30, 1845, if no alteration is made in the number of vessels, or in their respective complements.

Officers, &c.	Boston.	New York.	Philadelphia.	Norfolk.	New Orleans.	Charleston.	Total.	Aggregate amount.
Captains - - -	1	1	–	1	–	–	3	$10,500
Commanders - -	1	1	1	1	1	1	6	12,600
Lieutenants - - -	4	4	2	4	2	2	18	27,000
Masters - - -	1	1	1	1	1	1	6	6,000
Pursers - - -	1	1	–	1	–	–	3	7,500
Surgeons - - -	1	1	–	1	–	–	3	7,200
Assistant surgeons - -	1	1	–	1	–	–	3	3,600
Chaplains - - -	1	1	–	1	–	–	3	3,600
Passed midshipmen - -	3	3	–	3	–	–	9	6,750
Midshipmen - -	6	6	3	6	3	3	27	9,450
Clerks - - -	1	1	–	1	–	–	3	1,500
Boatswains - - -	1	1	–	1	–	–	3	2,400
Gunners - - -	1	1	–	1	–	–	3	2,400
Carpenters - - -	1	1	–	1	–	–	3	2,400
Sailmakers - - -	1	1	–	1	–	–	3	2,400
Yeomen - - -	1	1	–	1	–	–	3	1,440
Boatswain's mates - -	2	2	1	2	1	1	9	2,052
Gunner's mates - -	1	1	–	1	–	–	3	684
Carpenter's mates - -	1	1	1	1	1	1	6	1,368
Quartermasters - -	3	3	–	3	–	–	9	1,944
Masters-at-arms - -	1	1	–	1	–	–	3	648
Ships' corporals - -	1	1	–	1	–	–	3	540
Ships' stewards - -	1	1	1	1	1	1	6	1,296
Officers' stewards - -	2	2	1	2	1	1	9	1,944
Surgeons' stewards - -	1	1	–	1	–	–	3	648
Ships' cooks - - -	1	1	1	1	1	1	6	1,296
Officers' cooks - -	2	2	1	2	1	1	9	1,620
Captains of hold - -	1	1	–	1	–	–	3	540
Seamen - - -	15	15	2	15	4	2	53	7,632
Ordinary seamen - -	35	35	4	35	9	4	122	14,640
Landsmen and apprentices -	50	50	–	50	4	–	154	12,936
Total - - -	143	143	19	143	30	19	497	156,528

L. WARRINGTON,
Chief of Bureau.

BUREAU OF YARDS AND DOCKS,
November 21, 1843.

Y. and D.—No. 2.

RECRUITING STATIONS.

Estimate for the pay of officers attached to recruiting stations for the year ending 30th June, 1845, if no alteration is made in the number of stations.

Officers, &c.	Boston.	New York.	Philadelphia.	Norfolk.	New Orleans.	Charleston.	Total.	Aggregate amount.
Commandants - -	1	1	1	1	1	1	6	$12,600
Lieutenants - - -	2	2	2	2	2	2	12	18,000
Surgeons - - -	1	1	1	1	1	1	6	10,500
Midshipmen - -	2	2	2	2	2	2	12	4,200
Total - - -	6	6	6	6	6	6	36	45,300

L. WARRINGTON, *Chief of Bureau.*

Bureau of Yards and Docks,
November 21, 1843.

Y. and D.—No. 3.

Estimate of the pay of officers and others at navy yards and stations, for the year ending 30th June, 1845.

Navy yards.	Pay.	Aggregate.
PORTSMOUTH, NEW HAMPSHIRE.		
Naval.		
1 captain - - - - - - -	$3,500	
1 commander - - - - - -	2,100	
1 lieutenant - - - - - - -	1,500	
1 master - - - - - - -	1,000	
3 passed midshipmen, at $750 each - - -	2,250	
3 midshipmen, at $350 each - - - -	1,050	
1 surgeon - - - - - - -	1,800	
1 boatswain - - - - - - -	700	
1 gunner - - - - - - -	700	
1 carpenter - - - - - - -	700	
1 sailmaker - - - - - - -	700	
1 purser - - - - - - -	2,000	
1 steward, assistant to purser - - -	360	
		$18,360

ESTIMATE—Continued.

Navy yards.	Pay.	Aggregate.
PORTSMOUTH—Continued.		
Ordinary.		
1 lieutenant - - - - - - -	$1,500	
1 carpenter's mate - - - - - -	228	
6 seamen, at $144 each - - - -	864	
12 ordinary seamen, at $120 each - - -	1,440	
		$4,032
Civil.		
1 storekeeper - - - - - - -	1,400	
1 naval constructor - - - - - -	2,300	
1 foreman and inspector of timber - - -	700	
1 clerk to the yard - - - - - -	900	
1 clerk to the commandant - - - - -	900	
1 clerk (1st) to storekeeper - - - - -	800	
1 clerk to the storekeeper - - - - -	750	
1 clerk to the master builder - - - - -	400	
1 porter - - - - - - -	300	
		8,450
Total - - - - - - -	–	30,842
BOSTON.		
Naval.		
1 captain - - - - - - -	3,500	
1 commander - - - - - -	2,100	
2 lieutenants, at $1,500 each - - - - -	3,000	
2 masters, at $1,000 each - - - - -	2,000	
1 surgeon - - - - - - -	1,800	
1 chaplain - - - - - - -	1,200	
1 professor - - - - - - -	1,200	
4 passed midshipmen, at $750 each - - -	3,000	
3 midshipmen at $350, each - - - - -	1,050	
1 boatswain - - - - - - -	800	
1 gunner - - - - - - -	800	
1 carpenter - - - - - - -	800	
1 sailmaker - - - - - - -	800	
1 purser - - - - - - -	2,500	
1 clerk to purser - - - - - -	500	
1 steward - - - - - - -	360	
1 steward, assistant to purser - - -	360	
		$25,770

ESTIMATE—Continued.

Navy yards.	Pay.	Aggregate
BOSTON—Continued.		
Ordinary.		
2 lieutenants, at $1,500 each	$3,000	
1 master	1,000	
3 midshipmen, at $350 each	1,050	
1 boatswain	700	
1 gunner	700	
1 carpenter	700	
4 carpenter's mates, (3 as caulkers,) at $228 each	912	
2 boatswain's mates, at $228 each	456	
14 seamen, at $144 each	2,016	
36 ordinary seamen, at $120 each	4,320	
		$14,854
Hospital.		
1 surgeon	1,750	
1 assistant surgeon	950	
1 steward	360	
2 nurses, at $120 each, } When number of sick shall require them.	240	
2 washers, at $96 each, } When number of sick shall require them.	192	
1 cook	144	
		3,636
Civil.		
1 storekeeper	1,700	
1 naval constructor	2,300	
1 measurer and inspector of timber	1,050	
1 clerk to the yard	900	
1 clerk to the commandant	900	
1 clerk (2d) to the commandant	750	
1 clerk to the storekeeper	900	
1 clerk (2d) to the storekeeper	800	
1 clerk (3d) to the storekeeper	600	
1 clerk to the naval constructor	650	
1 keeper of the magazine	480	
1 porter	300	
		11,330
Total	-	55,590

NOTE.—The surgeon of the yard is to be required to attend to the marines also.

ESTIMATE—Continued.

Navy yards.	Pay.	Aggregate.
NEW YORK.		
Naval.		
1 captain	$3,500	
1 commander	2,100	
2 lieutenants, at $1,500 each	3,000	
2 masters, at $1,000 each	2,000	
1 surgeon	1,800	
1 chaplain	1,200	
1 professor	1,200	
4 passed midshipmen, at $750 each	3,000	
3 midshipmen, at $350 each	1,050	
1 boatswain	800	
1 gunner	800	
1 carpenter	800	
1 sailmaker	800	
1 purser	2,500	
1 clerk to purser	500	
1 steward	360	
1 steward, assistant to purser	360	
		$25,770
Ordinary.		
2 lieutenants, at $1,500 each	3,000	
1 master	1,000	
3 midshipmen, at $350 each	1,050	
1 boatswain	700	
1 gunner	700	
1 carpenter	700	
4 carpenter's mates, (3 as caulkers,) at $228 each	912	
2 boatswain's mates, at $228 each	456	
14 seamen, at $144 each	2,016	
36 ordinary seamen, at $120 each	4,320	
		14,854
Hospital.		
1 surgeon	1,700	
1 assistant surgeon	950	
1 steward	360	
2 nurses, at $120 each, } When number of sick shall require them.	240	
2 washers, at $96 each, }	192	
1 cook	144	
		3,636

ESTIMATE—Continued.

Navy yards.	Pay.	Aggregate.
NEW YORK—Continued.		
Civil.		
1 storekeeper	1,700	
1 naval constructor	2,300	
1 measurer and inspector of timber	1,050	
1 clerk to the yard	900	
1 clerk to the commandant	900	
1 clerk (2d) to the commandant	750	
1 clerk to the storekeeper	900	
1 clerk (2d) to the storekeeper	800	
1 clerk (3d) to the storekeeper	600	
1 clerk to the naval constructor	650	
1 keeper of the magazine	480	
1 porter	300	
		$11,330
Total	–	55,590
NOTE.—The surgeon of the yard is also to be required to attend to the marines.		
PHILADELPHIA.		
Naval.		
1 captain	3,500	
1 commander	2,100	
2 lieutenants, at $1,500 each	3,000	
1 master	1,000	
1 surgeon	1,800	
3 passed midshipmen, at $750 each	2,250	
2 midshipmen, at $350 each	700	
1 chaplain	1,200	
1 boatswain	700	
1 gunner	700	
1 carpenter	700	
1 purser	2,000	
1 steward	360	
		$20,010
Ordinary.		
1 lieutenant	1,500	
1 boatswain's mate	228	
4 seamen, at $144 each	576	
12 ordinary seamen, at $120 each	1,440	
		3,744

ESTIMATE—Continued.

Navy yards.		Pay.	Aggregate.
PHILADELPHIA—Continued.			
Naval asylum and hospital.			
1 captain		$3,500	
1 lieutenant		1,500	
1 secretary		900	
1 surgeon	To attend to the hospital also, if required.	1,750	
1 steward		360	
2 nurses, at $120 each,		240	
2 washers, at $96 each,		192	
1 cook		144	
			$8,586
Civil.			
1 storekeeper		1,250	
1 naval constructor		2,300	
1 inspector and measurer of timber		900	
1 clerk to the yard		900	
1 clerk to the commandant		900	
1 clerk to the storekeeper		800	
1 clerk (2d) to the storekeeper		750	
1 clerk to the naval constructor		400	
1 porter		300	
			8,500
Total		–	40,840

NOTE.—The surgeon of the yard is also required to attend to the receiving vessel and the marines.

Navy yards.	Pay.	Aggregate.
WASHINGTON.		
Naval.		
1 captain	3,500	
1 commander	2,100	
2 lieutenants, at $1,500 each	3,000	
1 master	1,000	
1 surgeon	1,800	
3 passed midshipmen, at $750 each	2,250	
2 midshipmen, at $350 each	700	
1 chaplain	1,200	
1 boatswain	700	
1 gunner	700	
1 carpenter	700	
1 purser	2,000	

ESTIMATE—Continued.

Navy yards.	Pay.	Aggregate.
WASHINGTON—Continued.		
1 steward - - - - - - -	$360	
1 steward, assistant to purser - - - -	360	
1 steward to hospital - - - - - -	360	
		$20,730
Ordinary.		
1 lieutenant - - - - - - -	1,500	
1 boatswain's mate - - - - - -	228	
1 carpenter's mate - - - - - -	228	
6 seamen, at $144 each - - - - -	864	
14 ordinary seaman, at $120 each - - -	1,680	
		4,500
Civil.		
1 storekeeper - - - - - - -	1,700	
1 inspector and measurer of timber - - -	900	
1 clerk to the yard - - - - - -	900	
1 clerk to the commandant - - - - -	900	
1 clerk (2d) to the commandant - - -	750	
1 clerk to the storekeeper - - - - -	800	
1 clerk (2d) to the storekeeper - - -	750	
1 master camboose maker and plumber - -	1,250	
1 chain cable and anchor maker - - -	1,250	
1 keeper of the magazine - - - - -	480	
1 porter - - - - - - - -	300	
		9,980
Total - - - - -	–	35,210
NOTE.—The surgeon is also required to attend to the hospital, when necessary.		
NORFOLK.		
Naval.		
1 captain - - - - - - -	3,500	
1 commander - - - - - - -	2,100	
2 lieutenants, at $1,500 each - - - -	3,000	
2 masters, at $1,000 each - - - - -	2,000	
1 surgeon - - - - - - -	1,800	
1 chaplain - - - - - - -	1,200	
1 professor - - - - - - -	1,200	
4 passed midshipmen, at $750 each - - -	3,000	

ESTIMATE—Continued.

Navy yards.	Pay.	Aggregate.
NORFOLK—Continued.		
3 midshipmen, at $350 each	$1,050	
1 boatswain	800	
1 gunner	800	
1 carpenter	800	
1 sailmaker	800	
1 purser	2,500	
1 clerk to purser	500	
1 steward	360	
1 steward, assistant to purser	360	
		$25,770
Ordinary.		
2 lieutenants, at $1,500 each	3,000	
1 master	1,000	
3 midshipmen, at $350 each	1,050	
1 boatswain	700	
1 gunner	700	
1 carpenter	700	
4 carpenter's mates, (3 as caulkers,) at $228 each	912	
2 boatswain's mates, at $228 each	456	
14 seamen, at $144 each	2,016	
36 ordinary seamen, at $120 each	4,320	
		14,854
Hospital.		
1 lieutenant	1,800	
1 surgeon	1,750	
1 assistant surgeon	950	
1 steward	360	
2 nurses, at $120 each, } When number of sick shall require them.	240	
2 washers, at $96 each, } When number of sick shall require them.	192	
1 cook	144	
		5,436
Civil.		
1 storekeeper	1,700	
1 naval constructor	2,300	
1 inspector and measurer of timber	1,050	
1 clerk to the yard	900	
1 clerk to the commandant	900	
1 clerk (2d) to the commandant	750	
1 clerk to the storekeeper	900	
1 clerk (2d) to the storekeeper	800	
1 clerk (3d) to the storekeeper	600	

ESTIMATE—Continued.

Navy yards.	Pay.	Aggregate.
NORFOLK—Continued.		
1 clerk to the naval constructor	$650	
1 keeper of the magazine	480	
1 porter	300	
		$11,330
Total	–	57,390
NOTE.—The surgeon of the yard is to be required to attend to the marines also.		
PENSACOLA.		
Naval.		
1 captain	3,500	
1 commander	2,100	
2 lieutenants, at $1,500 each	3,000	
1 master	1,000	
1 surgeon	1,800	
1 chaplain	1,200	
3 passed midshipmen, at $750 each	2,250	
3 midshipmen, at $350 each	1,050	
1 boatswain	700	
1 gunner	700	
1 carpenter	700	
1 sailmaker	700	
1 purser	2,500	
1 steward	360	
		$21,560
Ordinary.		
1 lieutenant	1,500	
1 carpenter	700	
1 carpenter's mate	228	
1 boatswain's mate	228	
10 seamen, at $144 each	1,440	
60 ordinary seamen, at $120 each	7,200	
		11,296
Hospital.		
1 surgeon	1,750	
1 assistant surgeon	950	
1 steward	360	
2 nurses, at $120 each, } When number of sick shall	240	
2 washers, at $96 each, } require them.	192	
1 cook	144	
		3,636

ESTIMATE—Continued.

Navy yards.	Pay.	Aggregate.
PENSACOLA—Continued.		
Civil.		
1 storekeeper	$1,700	
1 clerk to the yard	900	
1 clerk to the commandant	900	
1 clerk (2d) to the commandant	750	
1 clerk to the storekeeper	800	
1 clerk (2d) to the storekeeper	750	
1 clerk (3d) to the storekeeper	450	
1 porter	300	
		$6,550
Total	–	43,042
NOTE.—The surgeon of the yard is also to attend to the marines near the yard, and to such persons in the yard as the commander may direct.		

Stations.	Pay.	Aggregate.
BALTIMORE.		
1 captain	$3,500	
1 lieutenant	1,500	
1 surgeon	1,500	
1 purser	1,500	
1 clerk	500	
		$8,500
CHARLESTON.		
1 captain	3,500	
1 lieutenant	1,500	
1 surgeon	1,500	
1 purser and storekeeper	1,500	
		8,000
FOR GENERAL DUTY.		
1 chief naval constructor	3,000	
1 principal steam engineer	2,500	
		5,50

ESTIMATE—Continued.

Stations.	Pay.	Aggregate.
SACKETT'S HARBOR.		
1 master - - - - - -	-	$1,000
LAKE ERIE.		
1 naval constructor - - - - - -	-	2,300
FOREIGN STATIONS.		
1 storekeeper at Mâhon - - - -	$1,500	
1 storekeeper at Rio de Janeiro - - -	1,500	
3 storekeepers for African, Pacific, and East India squadrons - - - - - -	4,500	
		7,500

RECAPITULATION.

Navy yards, stations, &c.	Naval.	Ordinary.	Hospital.	Civil.	Aggregate.
Portsmouth, New Hampshire - - -	$18,360	$4,032	-	$8,450	$38,042
Boston - - -	25,770	14,854	$3,636	11,330	55,590
New York - -	25,770	14,854	3,636	11,330	55,590
Philadelphia - -	20,010	3,744	8,586	8,500	40,840
Washington - -	20,730	4,500	-	9,980	35,210
Norfolk - - -	25,770	14,854	5,436	11,330	57,390
Pensacola - - -	21,560	11,296	3,636	6,550	43,042
Baltimore - - -	8,000	-	-	500	8,500
Charleston - -	8,000	-	-	-	8,000
General duty - -	-	-	-	5,500	5,500
Sackett's Harbor - -	1,000	-	-	-	1,000
Lake Erie - -	-	-	-	2,300	2,300
Foreign stations - -	-	-	-	7,500	7,500
For the additional storekeepers and storekeeper's clerks, from 1st January to 1st July, 1844 -	-	-	-	5,050	5,050
	174,970	68,134	24,930	88,320	356,354

L. WARRINGTON,
Chief of Bureau.

BUREAU OF YARDS AND DOCKS,
November 21, 1843.

Y. and D.—No. 4.

Estimate of the amounts that will be required for making the proposed improvements and repairs in the several navy yards for the year ending June 30, 1845.

NAVY YARD AT PORTSMOUTH, N. H.

No. 1.	For completing quay walls from S to U	$36,286	30
No. 2.	For boat house and landing stage	1,227	50
No. 3.	For filling in low grounds	1,906	80
No. 4.	For repairs of all kinds	4,800	00
	Total	44,220	60

NAVY YARD AT BOSTON.

No. 1.	For storehouse on site No. 15, north wing, &c.	$30,561	74
No. 2.	For additional story upon ropewalk	49,413	24
No. 3.	For wharf between ship houses H and I	16,676	55
No. 4.	For raising boundary wall, west of ship house G	2,550	00
No. 5.	For machinery and tools for smithery and block makers' shop	8,000	00
No. 6.	For repairs of all kinds	14,000	00
	Total	121,201	53

NAVY YARD AT NEW YORK.

No. 1.	For brick stables	$5,000	00
No. 2.	For cob wharf round mud flats	30,000	00
No. 3.	For building No. 18, for steam engines, &c.	7,500	00
No. 4.	For smithery	30,000	00
No. 5.	For repairs of all kinds	8,618	00
	Total	81,118	00

NAVY YARD AT PHILADELPHIA.

No. 1.	For completing wharves Nos. 1, 2, and 3	$3,295	66
No. 2.	For outside pier of wharf No. 2	8,467	50
No. 3.	For outside pier of wharf No. 3	10,200	00
No. 4.	For wharf No. 4	6,725	00
No. 5.	For extending quay walls in slip of ship house G	3,845	00
No. 6.	For repairs of all kinds	2,082	00
	Total	34,615	16

NAVY YARD AT WASHINGTON.

No. 1.	For repairing and raising wharves	$5,250	00
No. 2.	For addition to quarters of lieutenant, master, and surgeon	2,704	00

ESTIMATE—Continued.

No. 3. For new forges in proving machine shop, conveying blast from anchor shop to forges - - -	$9,307 00
No. 4. For laboratory buildings - - - - -	3,790 00
No. 5. For steam forge hammer and forges in anchor shop -	10,470 00
No. 6. For building for galvanizing apparatus - -	2,232 00
No. 7. For machinery in engineer's department - -	6,300 00
No. 8. For repairs of all kinds - - - - -	6,177 00
Total - - - - - -	46,230 00
NAVY YARD AT NORFOLK.	
No. 1. For storehouse No. 13, to be used as timber shed -	$20,000 00
No. 2. For continuation of quay walls - - -	25,000 00
No. 3. For continuation of walls of timber dock - -	20,000 00
No. 4. For bridge across timber dock - - -	8,000 00
No. 5. For raising roof of building No. 19 - - -	20,000 00
No. 6. For completing No. 16, to be used as timber shed -	16,500 00
No. 7. For foundation of building slip - - -	1,800 00
No. 8. For repairs of all kinds - - - - -	13,380 00
Total - - - - - -	124,680 00
NAVY YARD AT PENSACOLA.	
No. 1. For storehouse E - - - - - -	$4,851 00
No. 2. For four warrant officers' houses - - -	32,000 00
No. 3. For floating water tank - - - - -	3,500 00
No. 4. For out house in commandant's yard - -	1,800 00
No. 5. For furnace in blacksmiths' shop - - -	786 26
No. 6. For repairs of all kinds - - - - -	7,200 00
Total - - - - - -	50,137 26

RECAPITULATION.

Portsmouth, New Hampshire - - - - -	$44,220 60
Boston - - - - - - - -	121,201 53
New York - - - - - - - -	81,118 00
Philadelphia - - - - - - - -	34,615 16
Washington - - - - - - - -	46,230 00
Norfolk - - - - - - - -	124,680 00
Pensacola - - - - - - - -	50,137 26
	502,202 55

L. WARRINGTON,
Chief of Bureau.

Bureau of Yards and Docks,
November 21, 1843.

Y. and D.—No. 5.

Statement showing the several items going to make up the sum of $469,862, being the first item in the general estimate from the bureau of Yards and Docks, (marked Y. and D.—A,) viz:

Receiving vessels, (see Y. and D.—No. 1, for detail) - -	$156,528
Recruiting stations, (see Y. and D.—No. 2, for detail) -	45,300
Navy yards, except the civil branch, (see Y. and D.—No. 3, for detail) - - - - - - -	268,034
For the second item in the general estimate of $88,320, see Y. and D.—No. 3, for detail of civil branch.	
	469,862

L. WARRINGTON,
Chief of Bureau.

Bureau of Yards and Docks,
November 21, 1843.

No. 5.

Bureau of Ordnance and Hydrography,
November 15, 1843.

Sir: In obedience to your order of the 24th ultimo, I have the honor to submit estimates for the support of this bureau for the year commencing the 1st of July, 1844, and ending the 30th June, 1845. Accompanying these estimates is a schedule of the papers composing them.

I have the honor to be, very respectfully, sir, your obedient servant,

W. M. CRANE.

Hon. David Henshaw,
Secretary of the Navy.

Schedule of the papers composing the estimates of the bureau of Ordnance and Hydrography for the year commencing the 1st July, 1844, and ending the 30th June, 1845.

A. Estimate of the expenses of the bureau for the year ending 30th June, 1845.

B. Estimate of the pay of officers on ordnance duty for the year ending 30th June, 1845.

C. Estimate of ordnance and ordnance stores, small arms, powder tanks, &c., required for the general service of the navy, for the year ending 30th June, 1845.

D. Estimate of the pay of officers, &c., on hydrographical duty for the year ending 30th June, 1845.

E. Estimate of the sums required for the naval service, under the head of "hydrography," for the year ending 30th June, 1845.

A.

Estimate of the sums required for the support of the office of bureau of Ordnance and Hydrography from 1st July, 1844, to 30th June, 1845.

For salary of the chief of bureau - - -	-	$3,500 00
For salary of one clerk, at $1,200 per annum, (per act 31st August, 1842) - - - -	$1,200 00	
For salary of one clerk, at $1,000 per annum, (per act 31st August, 1842) - - - -	1,000 00	
For salary of draughtsman, at $1,000 per annum, (per act 31st August, 1842) - - -	1,000 00	
For salary of messenger, at $700 per annum, (per act 31st August, 1842) - - - -	700 00	
		3,900 00
For contingent expenses of said bureau, viz:		
For blank books and stationery - - -	260 00	
For miscellaneous items - - - -	140 00	
For labor - - - - - -	120 00	
		520 00
		7,920 00

W. M. CRANE.

Bureau of Ordnance and Hydrography,
November 15, 1843.

B.

Estimate of pay of officers on ordnance duty from 1st July, 1844, to 30th June, 1845.

1 captain, at $3,500 per annum - - - -	$3,500 00
2 commanders, at $2,100 per annum each - - -	4,200 00
4 lieutenants, at $1,500 per annum each - - -	6,000 00
	13,700 00

W. M. CRANE.

Bureau of Ordnance and Hydrography,
November 15, 1843.

C.

Estimate of ordnance and ordnance stores, small arms, powder tanks, &c., required for the general service of the navy, from 1st July, 1844, *to* 30*th June*, 1845.

100 guns, 32-pounder, of about 42 cwt. each, at $133 per ton	$27,930 00
100 guns, 32-pounder, of about 27 cwt. each, for 3d class sloops and brigs, at $133 per ton - - - -	17,955 00
200 gun carriages, with implements complete, at $150 each	30,000 00
2,000 barrels of powder, at $17 each - - -	34,000 00
1,500 carbines, Jenks's patent, at $15 each - - -	22,500 00
1,200 swords, at $4 each - - - - -	4,800 00
1,200 pistols, at $5 each - - - - - -	6,000 00
2,000 copper powder flasks, at $1 each - - -	2,000 00
1,200 boarding pikes, at $2 each - - - -	2,400 00
100,000 pounds pig lead, for musket and pistol balls, at $3 50 per 100 pounds - - - - - - -	3,500 00
10,000 pounds sheet lead, for gun aprons, at 8 cents per pound	800 00
Copper powder tanks for 9 ships of the line - -	60,600 00
Copper powder tanks for 2 razees - - - -	7,500 00
Copper powder tanks for 8 frigates - - - -	29,000 00
Copper powder tanks for 5 sloops of war - - -	7,500 00
Copper powder tanks for 4 brigs or schooners - -	1,500 00
3,600 8-inch shells, weighing 262,800 pounds, at 5 cts. per lb.	13,140 00
6,360 stands of grape shot, at $2 50 per stand - -	15,900 00
360 stands of canister shot, at $3 per stand - - -	1,080 00
1,500 9-pounder shot, at 3 cents per pound - - -	405 00
For cannon locks, flannel for cylinders, battle and magazine lanterns, and other articles of ordnance stores - -	116,375 00
For contingent expenses that may accrue for the following purposes, viz:	
For drawings and models; for postage paid by officers on ordnance duty; for travelling expenses of officers in inspecting ordnance and ordnance stores; for hire of agents, and rent of storehouses for ordnance and ordnance stores on the lakes; for experiments in gun, shell, and shot practice; for targets; for transportation of ordnance and ordnance stores; for advertising in the public newspapers; for repairs of gun carriages; for a complete set of tools, machinery, and fixtures, for a laboratory capable of making fire works, &c., for the navy, and pay of chemist and pyrotechnist - - - - - - - -	56,000 00
For meeting liabilities on outstanding contracts made by the late Board of Navy Commissioners, under the act of 11th September, 1841, appropriating $600,000 for ordnance and ordnance stores, (which appropriation has been merged in the general appropriation for "increase, repairs, &c.") -	160,000 00
	620,885 00

W. M. CRANE.

Bureau of Ordnance and Hydrography,
November 15, 1843.

D.

Estimate of the pay required for officers, &c., on hydrographical duty, from the 1st of July, 1844, *to the 30th June*, 1845.

4 lieutenants, at $1,500 per annum - - - - -	$6,000 00
8 passed midshipmen, at $750 per annum - - -	6,000 00
1 clerk attached to bureau of Ordnance and Hydrography, per act of Congress of 31st August, 1842 - - -	1,000 00
1 draughtsman - - - - - - -	1,000 00
1 porter - - - - - - - -	180 00
	14,180 00

W. M. CRANE.

Bureau of Ordnance and Hydrography,
November 15, 1843.

E.

Estimate of the amount required for the naval service, under the head of hydrography, from 1st *July*, 1844, *to 30th June*, 1845.

For the purchase of nautical books, maps, charts, and instruments - - - - - - - -	$28,000 00
For binding and repairing nautical books, maps, charts, and instruments, including pay of workmen - - -	6,000 00
For freight and transportation - - - - -	1,000 00
For postage, models, drawings, and incidental labor - -	2,500 00
For travelling expenses - - - - - -	1,200 00
For house rent - - - - - - - -	500 00
For fuel, lights, repairs of house, and other contingent expenses - - - - - - - - -	1,800 00
For office books and stationery - - - - -	1,000 00
For working the lithographic press, including the pay of lithographer, and the cost of stones, ink, and chemicals -	1,200 00
	43,200 00

W. M. CRANE.

Bureau of Ordnance and Hydrography,
November 15, 1843.

No. 6.

Estimates and statements from the bureau of Construction, Equipment, and Repairs, for the year ending 30th June, 1845.

A schedule of papers contained in the estimates for the naval service, prepared by the bureau of Construction, Equipment, and Repairs, for the year ending on the 30th of June, 1845, viz :

A. An estimate of the expenses of the bureau for the year ending 30th June, 1845.

B. An estimate of the amounts that will be required for the pay of the several squadrons for the year ending 30th June, 1845.

C. An estimate of the sums required under the appropriation for the pay, wear and tear, and contingent expenses of the navy, for the several vessels to be kept in commission for the year ending the 30th June, 1845.

D. An estimate of the amount that will be required to keep in commission for one year, ending the 30th June, 1845, under the appropriation for the pay, wear and tear, and contingent expenses of the navy, for two steamers of the first class and four smaller ones.

E. An estimate of the probable consumption of coal for one year, ending the 30th of June, 1845, for two steamers of the first class and four smaller ones.

F. A statement of the names of the vessels in ordinary or under repairs at the several navy yards on the 1st of November, 1843.

G. A statement of the names of the vessels on the stocks at the several navy yards on the 1st November, 1843.

H. A statement of the materials used and expended for the fiscal year ending the 30th June, 1843, and balance of stores on hand at that period.

I. A statement of the labor done at the several yards for the year ending the 30th June, 1843.

J. An estimate of the amount required under increase, repairs, armament, and equipment of the navy, and wear and tear of vessels in commission, for the year ending 30th June, 1845.

A.

An estimate of the sums required for the support of the bureau of Construction, Equipment, and Repairs, for the year ending the 30th of June, 1845, *under the law of the 30th August,* 1842.

For the salary of the chief of bureau - - -	$3,000	
For salaries of 4 clerks, draughtsman, and messenger	6,100	
For the pay of a clerk, employed to assist the chief naval constructor, from July 8 to November 2, 1843, 4 months, at $1,000 per annum - -	335	
		$9,435
Contingent expenses.		
For blank books and stationery - - - -	200	
For miscellaneous items - - - - -	180	
For labor - - - - - - - -	120	
		500
		9,935

Bureau of Construction, Equipment, and Repairs,
November 1, 1843.

B.

An estimate of the amount of pay that will be required for the following squadrons of vessels in commission for the year ending the 30th of June, 1845.

For the Mediterranean.			
One commander-in-chief - -	–	$4,000	
Three frigates of the 1st class - -	3	277,962	
Three sloops of the 1st class - -	3	138,084	
One sloop of the 3d class - -	1	34,734	
One brig or schooner - - -	1	19,224	
One store ship - - - -	1	19,692	
			$493,696
	9		
For the coast of Brazil.			
One commander-in-chief - -	–	4,000	
Two frigates of the 1st class - -	2	185,308	
Two sloops of the 1st class - -	2	92,056	
One sloop of the 3d class - -	1	34,734	
One brig or schooner - - -	1	19,224	
One store ship - - - -	1	19,692	
			355,014
	7		

ESTIMATE—Continued.

For the Pacific station.			
One commander-in-chief	–	$4,000	
Two frigates of the 1st class	2	185,308	
One frigate of the 2d class	1	76,676	
Three sloops of the 1st class	3	138,084	
One sloop of the 3d class	1	34,734	
Two brigs or schooners	2	38,448	
One store ship	1	19,692	
	10		$496,942
For the East India station.			
One commander-in-chief	–	4,000	
Two frigates of the 1st class	2	185,308	
Two sloops of the 1st class	2	92,056	
One brig or schooner	1	19,224	
One store ship	1	10,476	
	6		311,064
For the Home station.			
One commander-in-chief	–	4,000	
Two frigates of the 1st class	2	185,308	
One frigate of the 2d class	1	76,676	
Four sloops of the 1st class	4	184,112	
Two sloops of the 3d class	2	69,468	
Two 1st class steamers	2	113,134	
Five brigs or schooners	5	96,120	
For the steamer Princeton	1	42,540	
For the steamer Union	1	42,540	
For the steamer on the lakes	1	42,540	
For the steamer Engineer	1	4,370	
	20		860,808
For the coast of Africa.			
One commander-in-chief	–	4,000	
Four sloops of the 1st class	4	184,112	
Two brigs or schooners	2	38,448	
One store ship	1	10,476	
	7		237,036
			2,754,560

RECAPITULATION.

For the Mediterranean station - - - - -	$493,696
For the Brazil station - - - - - -	355,014
For the Pacific station - - - - - -	496,942
For the East India station - - - - - -	311,064
For the Home station - - - - - -	860,808
For the African station - - - - - -	237,036
Aggregate - - - - - - -	2,754,560

Bureau of Construction, Equipment, and Repairs,
November 1, 1843.

C.

An estimate of the sums required, under the following heads of appropriation, for the following vessels, for the year ending the 30*th of June,* 1845.

Vessels.	Pay.	Wear and tear, including their fuel.	Contingent.	Aggregate.
Eleven frigates of 1st class -	$1,019,194	$330,000	$74,250	$1,423,444
Two frigates of 2d class -	153,352	50,000	11,400	214,752
Eighteen sloops of 1st class -	828,504	180,000	54,000	1,062,504
Five sloops of 3d class -	173,670	32,500	11,500	217,670
Two 1st class steamers -	113,134	93,480	11,400	218,014
Four smaller steamers -	131,990	70,880	14,800	217,670
Five store vessels - -	80,028	9,000	3,350	92,378
Twelve brigs or schooners -	230,688	60,000	12,600	303,288
				3,749,720

RECAPITULATION.

Eleven frigates of the 1st class - - - - -	$1,423,444
Two frigates of the 2d class - - - - - -	214,752
Eighteen sloops of the 1st class - - - - -	1,062,504
Five sloops of the 3d class - - - - - -	217,670
Two 1st class steamers - - - - - -	218,014
Four smaller steamers - - - - - -	217,670
Five store vessels - - - - - - -	92,378
Twelve brigs or schooners - - - - - -	303,288
	3,749,720

Bureau of Construction, Equipment, and Repairs,
November 1, 1843.

D.

An estimate showing the amount of the pay, wear and tear, and contingent expenses, of the following steamers, for one year ending the 30th of June, 1845.

Steamers' names.	Pay.	Wear & tear, including 4 months' coal.	Contingent.	Aggregate.
Mississippi - - -	$70,594	$48,040	$5,700	$124,334
Fulton - - -	42,540	45,160	5,700	93,400
Princeton - - -	42,540	21,520	3,000	67,060
Union - - -	42,540	18,520	2,000	63,060
Lake steamer - - -	42,540	21,520	3,000	67,060
Engineer - - -	4,370	9,320	1,100	14,790
				429,704

RECAPITULATION.

Mississippi - - - - - - -	$124,334
Fulton - - - - - - -	93,400
Princeton - - - - - - -	67,060
Union - - - - - - -	63,060
Lake steamer - - - - - -	67,060
Engineer - - - - - - -	14,790
	429,704

Bureau of Construction, Equipment, and Repairs,
November 1, 1843.

E.

An estimate of the consumption of coal, its probable cost per ton, and aggregate cost, for the following steamers, 4 months, or 120 days, being allowed for its consumption.

Steamers.	Tons of coal in 24 hours.	Tons of coal in 4 months.	Cost per ton.	Aggregate.
Mississippi - - - -	32	3,840	$6	$23,040
Princeton - - - -	16	1,920	6	11,520
Fulton - - - - -	28	3,360	6	20,160
Lake steamer - - - -	16	1,920	6	11,520
Union - - - - -	16	1,920	6	11,520
Engineer - - - -	6	720	6	4,320
	114	13,680	-	82,080

N. B. It is presumed that coal can now be purchased at a lower price than $8.

Bureau of Construction, Equipment, and Repairs,
November 1, 1843.

F.

A statement of the names of the vessels in ordinary or under repairs at the several navy yards on the 1st day of November, 1843.

At Portsmouth, N. H.

The sloop of war Portsmouth—just launched.

At Charlestown, Mass.

The ship of the line Ohio—used as a receiving ship, and in good condition.

The ship of the line Franklin—ordered from New York to be razeed.

The frigates Cumberland and Potomac—nearly ready for sea.

The Mississippi, a 1st class steamer—dismantled.

The sloop of war Boston—ready for sea.

The sloop of war Plymouth—just launched, and fitting for sea.

The sloop of war Preble—repairing.

The sloop of war Marion—nearly ready for sea.

The brig Consort, (store vessel)—ready for sea.

At Brooklyn, N. Y.

The ship of the line North Carolina—used as a receiving ship, and in good order.
The frigate Hudson—unfit for service.
The sloop Yorktown—repairing.
The sloop Dale—in ordinary.

At Philadelphia, Penn.

The Raritan—nearly ready for sea.
The steamer Princeton—just completed.
The receiving vessel Experiment—unfit for sea service.

At Norfolk, Va.

The ship of the line Pennsylvania—in good order, and used as a receiving vessel.
The Constitution—repairing.
The Ontario—repairing, and nearly ready for sea.
The new brig Perry—nearly ready for sea.
The new brig Lawrence—nearly ready for sea.
The brig Dolphin—can soon be fitted for sea.
The brig Oregon—in ordinary.

At Washington, D. C.

The steamers Union and Engineer—undergoing repairs.

Bureau of Construction, Equipment, and Repairs,
November 1, 1843.

G.

A statement of the names of the vessels on the stocks, at the several navy yards, on the 1*st day of November*, 1843.

At Portsmouth, N. H.

The Alabama, ship of the line; and the Santee, a first class frigate.

At Charlestown, Mass.

The Virginia and Vermont, ships of the line.

At Brooklyn, N. Y.

The Sabine, a first class frigate; and the Albany, a first class sloop.

At Philadelphia, Penn.

The Germantown, a first class sloop.

AT WASHINGTON, D. C.

The St. Mary's, a first class sloop; and an iron steamer, not yet named.

AT NORFOLK, VA.

The New York, a ship of the line; the Jamestown, a first class sloop; and the frigate St. Lawrence, nearly ready to launch.

In addition to the above, there is being constructed at Erie, Pennsylvania, and not yet named, a medium sized iron steamer.

RECAPITULATION.

4 ships of the line	4
2 first class frigates	2
4 first class sloops	4
2 iron steamers	2
Total on the stocks, November 1, 1843	12

BUREAU OF CONSTRUCTION, EQUIPMENT, AND REPAIRS,
November 1, 1843.

H.

A statement of the cost or estimated value of stores on hand at the several navy yards, at the close of the fiscal year, (1st July, 1843,) of articles received and expended from the 1st July, 1842, to the 1st July, 1843, and the stores on hand at that period, (1st July, 1843,) under the appropriation for increase, repairs, armament, and equipment of the navy, and wear and tear of vessels in commission.

Yards.	Value on hand 1st July, 1842.	Receipts.	Expenditures.	Value on hand 1st July, 1843.
Portsmouth	$619,778 58	$52,088 65	$88,820 90	$583,046 33
Boston	1,673,664 59	459,349 71	441,877 97	1,691,136 33
New York	1,273,132 67	404,580 54	324,655 01	1,353,058 20
Philadelphia	454,581 87	92,094 79	42,626 23	504,050 43
Washington	536,299 68	234,971 01	232,512 31	638,758 38
Norfolk	1,451,727 31	377,742 40	280,659 97	1,548,809 74
Pensacola.				

BUREAU OF CONSTRUCTION, EQUIPMENT, AND REPAIRS,
November 1, 1843.

I.

A statement exhibiting the number of days' labor, and the amounts expended, at the several navy yards, from the 1st of July, 1842, to the 30th of June, 1843, for the wages of mechanics and laborers, in building, repairing, or equipping vessels of the navy, or in receiving or securing stores and materials for these purposes.

Navy yards.	Days of labor.	Cost of labor.	Price of labor per day.
Portsmouth, New Hampshire -	16,508¼	$22,531 22	$1 36½
Charlestown - - -	74,653½	126,791 91	1 69$\frac{8}{10}$
Brooklyn, New York - -	87,070½	136,061 04	1 56$\frac{26}{100}$
Philadelphia - - -	21,152	28,325 91	1 33
Washington - - -	63,983	93,179 02½	1 45½
Norfolk - - - -	119,107¾	175,029 91	1 47
Pensacola.			

Bureau of Construction, Equipment, and Repairs,
November 1, 1843.

J.

There will be required under the head of "increase, repair, armament, and equipment of the navy," and "wear and tear of vessels in commission," for the year ending 30th June, 1844, one million nine hundred thousand dollars.

Increase, repair, armament, and equipment of the navy, and wear and tear of vessels in commission - - - -	$1,900,000

No. 7.

Navy Department,
Bureau of Provisions and Clothing, November 14, 1843.

Sir: I have the honor to submit herewith, in triplicate, (marked A and B,) estimates for the naval service for the year commencing 1st July, 1844, and ending 30th June, 1845, viz:

A. Estimate of provisions for the year.

B. Estimate of the expense of the bureau for the year.

I have the honor to be, very respectfully, sir, your obedient servant,

CH. W. GOLDSBOROUGH,
Chief of the Bureau.

Hon. David Henshaw, *Secretary of the Navy.*

A.

Estimate of the provisions required for the navy for one year, commencing July 1, 1844, *and ending June* 30, 1845, *showing the cost of each vessel, and of each yard, and the aggregate cost of the number of vessels of each description proposed to be employed, and the general aggregate of vessels and yards, for provisions.*

Description of vessels, &c.	Number of men each.	Number of rations each.	Cost of rations each.	No. of vessels estimated for.	Aggregate number of men.	Aggregate number of rations.	Aggregate cost of rations.
Frigate, first class -	470	171,550	$34,310	11	5,170	1,887,050	$377,410
Frigate, second class -	370	135,050	27,010	2	740	270,100	54,020
Sloop, first class -	195	71,175	14,235	18	3,510	1,281,150	256,230
Sloop, third class -	175	63,875	12,775	5	875	319,375	63,875
Brig or schooner -	70	25,550	5,110	12	840	306,600	61,320
Steamer Mississippi -	251	91,615	18,323	1	251	91,615	18,323
Steamer Fulton -	235	85,775	17,155	1	235	85,775	17,155
Steamer on the lakes -	120	43,800	8,760	1	120	43,800	8,760
Steamer at Washington navy yard - -	40	14,600	2,920	1	40	14,600	2,920
Steamer Princeton -	120	43,800	8,760	1	120	43,800	8,760
Steamer Union - -	120	43,800	8,760	1	120	43,800	8,760
RECEIVING SHIPS.							
Ohio - - -	143	52,195	10,439	1	143	52,195	10,439
North Carolina -	143	52,195	10,439	1	143	52,195	10,439
Pennsylvania - -	143	52,195	10,439	1	143	52,195	10,439
Ontario - -	30	10,950	2,190	1	30	10,950	2,190
Experiment - -	19	6,935	1,387	1	19	6,935	1,387
On-ka-hy-e - -	19	6,935	1,387	1	19	6,935	1,387
Wave - - -	19	6,935	1,387	1	19	6,935	1,387
NAVY YARDS.							
Portsmouth, N. H. -	20	7,300	1,460	-	20	7,300	1,460
Boston, Mass. - -	58	21,170	4,234	-	58	21,170	4,234
Brooklyn, N. Y. -	58	21,170	4,234	-	58	21,170	4,234
Philadelphia, Penn. -	18	6,570	1,314	-	18	6,570	1,314
Washington, D. C. -	24	8,760	1,752	-	24	8,760	1,752
Norfolk, Va. - -	58	21,170	4,234	-	58	21,170	4,234
Pensacola, Fla. -	53	19,345	3,869	-	53	19,345	3,869
STORE SHIPS.							
Erie - - -	65	23,725	4,745	1	65	23,725	4,745
Consort - -	24	8,760	1,752	1	24	8,760	1,752
Lexington - -	65	23,725	4,745	1	65	23,725	4,745
Pioneer - -	24	8,760	1,752	1	24	8,760	1,752
Relief - -	65	23,725	4,745	1	65	23,725	4,745
					13,069	4,770,185	954,037

13,069 persons, each drawing one ration, make 4,770,185 rations, at 20 cents each, is - - - - - -	$954,037
To this must be added the average number of recruits at the different recruiting stations, for relief vessels, and to supply deficiencies in the crews, arising from expirations of service, deaths, and other causes, estimated at 1,000, requiring 365,000 rations, at 20 cents each, is - - - - - -	73,000
	1,027,037

CH. W. GOLDSBOROUGH,
Chief of the Bureau.

NAVY DEPARTMENT,
Bureau of Provisions and Clothing, Nov. 13, 1843.

B.

Estimate of the expense of the bureau of Provisions and Clothing for the year commencing 1*st July,* 1844, *and ending* 30*th June,* 1845, *agreeably to the* 4*th section of the act of August* 31, 1842, *entitled "An act to reorganize the Navy Department of the United States."*

For compensation to the chief of the bureau, at $3,000 per annum - - - - - - - - -	$3,000
For compensation to the chief clerk, at $1,400 - - -	1,400
For compensation to a clerk, at $1,200 - - - - -	1,200
For compensation to a clerk, at $800 - - - - -	800
For compensation to a messenger, at $700 - - -	700

Contingent.

For blank books, stationery, and binding - - -	450
For miscellaneous items - - - - - - - -	200

Submitted.

For two accountants.	
For compensation to an extra clerk, employed from 7th of April, 1843, to 1st of January, 1844, at $2 per day - - -	538

In submitting the above estimate for the bureau, I feel it to be my duty, in reference to the public interests, again to suggest the necessity of being allowed two good accountants, in addition to the number of clerks now allowed by law.

The property accounts coming under the cognizance of this bureau are very numerous, and involve a multiplicity of details; all that the present force can do now is to examine them, enter the results in a blotter, and communicate them to the parties concerned. Surely, such entries ought to be made in a journal, and should be transferred thence to a leger, that at one view the accounts of each person charged with public property might be seen.

All disbursing officers are held to a strict accountability for every species of property committed to their care ; but the entries against them, and the credits to which they are entitled for expenditures, can now only be found in blotters, scattered over their pages, instead of being, as they surely ought to be, collected and exhibited at one view on the pages of a leger. We have had the leger and other necessary books prepared, in readiness to be opened whenever the requisite force shall be allowed.

On these grounds, I respectfully submit the expediency of two able accountants being allowed, in addition to the present force of this bureau.

I have further to observe, that it was found absolutely necessary, to keep up the records of the office, to employ a temporary clerk. This was done with the approbation of the head of the department. He has rendered faithful service since the 7th of April last, without receiving any compensation; without his aid our records could not have been kept up. He makes no claim; but justice appears to me to require that he should be compensated; and I submit in his case an estimate for $538, to compensate him for his sevices from the 7th of April, 1843, to the 1st of January, 1844.

CH. W. GOLDSBOROUGH,
Chief of the Bureau.

NAVY DEPARTMENT,
Bureau of Provisions and Clothing, Nov. 14, 1843.

No. 8.

Estimate for surgeons' necessaries and appliances for the sick and hurt of the naval service, including the marine corps, for the year ending June 30, 1845.

11 frigates, first class, at $950 - - - - - -		$10,450
2 frigates, second class, at $800 - - - - -		1,600
18 sloops of war, first class, at $700 - - - -		12,600
5 sloops of war, third class, at $550 - - - - -		2,750
6 steamers, at $500 - - - - - - -		3,000
12 brigs and schooners, at $500 - - - - -		6,000
5 store ships, at $250 - - - - - - -		1,250
59 vessels.		37,650
1 receiving ship, Ohio, at Boston - - -	$1,000	
1 receiving ship, North Carolina, at New York -	300	
1 receiving ship, Pennsylvania, at Norfolk - -	500	
		1,800
7 navy yards, at $350 each - - - -	2,450	
1 naval station, at Charleston, South Carolina -	350	
		2,800
		42,250

NAVY DEPARTMENT,
Bureau of Medicine and Surgery, Nov. 29, 1843.

No. 9.—PAY DEPARTMENT.

Detailed estimate of pay and subsistence of officers and pay of non-commissioned officers, musicians, and privates, of the marine corps of the United States, from the 1st of July, 1844, to the 31st of December, 1844, inclusive.

RANK AND GRADE.	Number.	PAY.					SUBSISTENCE.			Aggregate.
		Pay per month.	Extra pay per month.	Number of servants, at $8 per month.	Number of servants, at $7 per month.	Total.	Number of rations per day, at 20 cents per ration.	No. of extra or double rations per day, at 20 cents per ration.	Total.	
Brigadier general commandant	1	75	-	-	2	$534 00	6	6	$441 60	$975 60
Lieutenant colonel	1	60	-	-	2	444 00	5	5	368 00	812 00
Majors	4	50	-	-	2	1,536 00	4	4	1,177 60	2,713 60
Adjutant and inspector	1	60	-	2	-	456 00	4	-	147 20	603 20
Paymaster	1	60	-	2	-	456 00	4	-	147 20	603 20
Quartermaster	1	60	-	2	-	456 00	4	-	147 20	603 20
Assistant quartermaster	1	50	-	1	-	348 00	4	-	147 20	496 20
Captains commanding ports and at sea	8	50	-	-	1	2,736 00	4	4	2,355 20	5,091 20
Captains	2	40	-	-	1	564 00	4	-	294 40	858 40
First lieutenants commanding guards or detachments at sea	4	40	-	-	1	1,128 00	4	4	1,177 60	2,305 60
First lieutenants	15	30	-	-	1	3,330 00	4	-	2,208 00	5,538 00
Second lieutenants	20	25	-	-	1	3,840 00	4	-	2,944 00	6,784 00
Sergeant major	1	17	-	-	-	102 00	-	-	-	102 00
Quartermaster sergeant	1	17	20	-	-	222 00	-	-	-	222 00
Drum and fife majors	2	16	-	-	-	192 00	-	-	-	192 00
Orderly sergeants and sergeants of guards at sea	34	16	-	-	-	3,264 00	-	-	-	3,264 00
Orderly sergeants employed as clerks to brigadier general commandant, adjutant and inspector, paymaster, and quartermaster	6	16	20	-	-	1,296 00	-	-	-	1,296 00

Sergeants - - - - - - -	40	13	-	-	-	3,120 00	-	-	-	3,120 00
Corporals - - - - - - -	80	9	-	-	-	4,320 00	-	-	-	4,320 00
Drummers and fifers - - - - - -	60	8	-	-	-	2,880 00	-	-	-	2,880 00
Privates - - - - - - -	1,000	7	-	-	-	42,000 00	-	-	-	42,000 00
Hospital steward - - - - - -	1	18	-	-	-	108 00	1	-	36 80	144 80
Clerk to paymaster - - - - - -	1	-	-	-	-	*325 00	-	-	-	325 00
Additional rations to officers for five years' service - -	-	-	-	-	-	-	165	-	6,072 00	6,072 00
Bounty for re-enlistment - - - - -	62	-	-	-	-	868 00	-	-	-	868 00
Two months' pay for unexpired time of former enlistment -	62	-	-	-	-	868 00	-	-	-	868 00
Two months' rations for unexpired time of former enlistment -	62	-	-	-	-	-	1 at 19 cts.	-	716 80	716 80
Two months' clothing for unexpired time of former enlistment	62	-	-	-	-	-	-	-	310 00	310 00
Officers' servants, at $8 50 per month, for clothing and rations	68	-	-	-	-	-	-	-	3,468 00	3,468 00
Undrawn clothing - - - - - -	-	-	-	-	-	-	-	-	3,000 00	3,000 00
						75,393 00			25,158 80	100,551 80

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* This sum of $325 covers and is in lieu of pay, clothing, rations, fuel, and quarters, from July 1 to December 31, 1844.

Respectfully submitted:

GEO. W. WALKER, *Paymaster Marine Corps.*

HEADQUARTERS MARINE CORPS,
Paymaster's Office, September 22, 1843.

No. 2.—PAY DEPARTMENT.

Detailed estimate of pay and subsistence of officers and pay of non-commissioned officers, musicians, and privates, of the marine corps of the United States, from the 1st of July, 1844, to the 31st of December, 1844, inclusive.

RANK AND GRADE.	Number.	PAY.					SUBSISTENCE.			Aggregate.
		Pay per month.	Extra pay per month.	Number of servants, at $8 per month.	Number of servants, at $7 per month.	Total.	Number of rations per day, at 20 cents per ration.	No. of extra or double rations per day, at 20 cents per ration.	Total.	
Brigadier general commandant - - - - -	1	75	-	-	2	$534 00	6	6	$441 60	$975 60
Lieutenant colonel - - - - - - -	1	60	-	-	2	444 00	5	5	368 00	812 00
Majors - - - - - - - -	4	50	-	-	2	1,536 00	4	4	1,177 60	2,713 60
Adjutant and inspector - - - - - -	1	60	-	2	-	456 00	4	-	147 20	603 20
Paymaster - - - - - - - -	1	60	-	2	-	456 00	4	-	147 20	603 20
Quartermaster - - - - - - -	1	60	-	2	-	456 00	4	-	147 20	603 20
Assistant quartermaster - - - - - -	1	50	-	1	-	348 00	4	-	147 20	495 20
Captains commanding ports and at sea - - -	8	50	-	-	1	2,736 00	4	4	2,355 20	5,091 20
Captains - - - - - - - -	2	40	-	-	1	564 00	4	-	294 40	858 40
First lieutenants commanding guards or detachments at sea -	4	40	-	-	1	1,128 00	4	4	1,177 60	2,305 60
First lieutenants - - - - - - -	15	30	-	-	1	3,330 00	4	-	2,208 00	5,538 00
Second lieutenants - - - - - - -	20	25	-	-	1	3,840 00	4	-	2,944 00	6,784 00
Sergeant major - - - - - - -	1	17	-	-	-	102 00	-	-	-	102 00
Quartermaster sergeant - - - - - -	1	17	20	-	-	222 00	-	-	-	222 00
Drum and fife majors - - - - - -	2	16	-	-	-	192 00	-	-	-	192 00
Orderly sergeants and sergeants of guards at sea - -	34	16	-	-	-	3,264 00	-	-	-	3,264 00
Orderly sergeants employed as clerks to brigadier general commandant, adjutant and inspector, paymaster, and quartermaster - - - - - - -	6	16	*20	-	-	1,296 00	-	-	-	1,296 00

Sergeants	40	13	-	-	-	3,120 00	-	-	-	3,120 00
Corporals	80	9	-	-	-	4,320 00	-	-	-	4,320 00
Drummers and fifers	60	8	-	-	-	2,880 00	-	-	-	2,880 00
Privates	1,000	7	-	-	-	42,000 00	-	-	-	42,000 00
Hospital steward	1	18	-	-	-	108 00	1	-	36 80	144 80
Clerk to paymaster	1	-	-	-	-	*325 00	-	-	-	325 00
Additional rations to officers for five years' service	-	-	-	-	-	-	165	-	6,072 00	6,072 00
Bounty for re-enlistment	62	-	-	-	-	868 00	-	-	-	868 00
Two months' pay for unexpired time of former enlistment	62	-	-	-	-	868 00	-	-	-	868 00
Two months' rations for unexpired time of former enlistment	62	-	-	-	-	-	1 at 19 cts.	-	716 80	716 80
Two months' clothing for unexpired time of former enlistment	62	-	-	-	-	-	-	-	310 00	310 00
Officers' servants, at $8 50 per month, for clothing and rations	68	-	-	-	-	-	-	-	3,468 00	3,468 00
Undrawn clothing	-	-	-	-	-	-	-	-	3,000 00	3,000 00
						75,393 00			25,158 80	100,551 80

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* This sum of $325 covers and is in lieu of pay, clothing, rations, fuel, and quarters, from July 1 to December 31, 1844.

Respectfully submitted:

GEO. W. WALKER, *Paymaster Marine Corps.*

HEADQUARTERS MARINE CORPS,
Paymaster's Office, September 22, 1843.

Estimate of the expenses of the marine corps from July 1 to December 31, 1844.

There will be required for the support of the quartermaster's department of the marine corps, from 1st July to 31st December, 1844, in addition to the balances remaining on hand on the 30th June, 1844, the sum of two hundred and forty-five thousand and twenty-nine dollars and eighty cents.

QUARTERMASTER'S DEPARTMENT.

1st. For provisions - - - - - - - - -	$22,685 24
2d. For clothing - - - - - - - - -	21,817 50
3d. For fuel - - - - - - - - - -	8,137 06
4th. For military stores, repair of arms, pay of armorers, accoutrements, ordnance stores, flags, drums, fifes, and musical instruments - - - -	1,400 00
5th. For transportation of officers and troops, and for expenses of recruiting -	4,000 00
6th. For repair of barracks, and for rent of temporary barracks - - -	3,000 00
7th. For contingencies, viz: freight, ferriage, toll, wharfage and cartage, compensation to judges advocate, per diem for attending courts martial and courts of inquiry, per diem to enlisted men on constant labor, house rent where no public quarters are assigned, the burial of deceased marines, printing, stationery, forage, postage, the pursuit of deserters, candles and oil, straw, barrack furniture, bed sacks, spades, axes, shovels, picks, carpenters' tools, and the keeping of a horse for the messenger - - - - -	8,990 00
8th. For the purchase of a site and to commence the erection of barracks at Charlestown, Massachusetts - - - - - - - -	50,000 00
For the purchase of a site and to commence the erection of barracks at Brooklyn, New York - - - - - - - - -	50,000 00
For the purchase of a site and to commence the erection of barracks at Gosport, Virginia - - - - - - - - -	50,000 00
To commence the erection of barracks at Pensacola - - - - -	25,000 00
	245,029 80

Respectfully submitted.

AUG. A. NICHOLSON,
Quartermaster Marine Corps.

PROVISIONS.

For whom required.	Enlisted men.	Washerwomen.	Matron.	Servants.	Clerks.	Total.	Rations per day at 19 cents.	Rations per day at 20 cents.	Amount.
Non-commissioned officers, musicians, privates, servants, and washerwomen -	514	34	1	-	-	549	1	-	$19,193 04
Clerks and officers' servants - -	-	-	-	68	8	76	-	1	2,796 80
Bounty for re-enlistment, agreeably to act of March 2, 1833, two months' rations	60	-	-	-	-	60	1	-	695 40
									22,685 24

CLOTHING.

For whom required.	Enlisted men.	Servants.	Clerks.	Total.	Amount.
Non-commissioned officers, musicians, and privates, at $33 per annum	1,156	-	-	1,156	$19,074 00
Officers' servants, at $[illegible] per annum	-	68	-	68	1,122 00
Paymaster's clerk, at $33 per annum	-	-	1	1	16 50
Bounty for re-enlistment, agreeably to act of March 2, 1833, two months' clothing	60	-	-	60	330 00
150 watch coats, at $8 50 each	-	-	-	-	1,275 00
					21,817 50

FUEL.

For whom required.	Number.	Fuel for each.			Total fuel.		
		Cords.	Feet.	Inches.	Cords.	Feet.	Inches.
Brevet brigadier general	1	-	-	-	18	2	1
Lieutenant colonel, south of latitude 39°	1	-	-	-	13		
Major, do do 39	1	-	-	-	13		
Captains, do do 39	3	10	5	-	31	7	
Staff, do do 39	3	13	-	-	39		
Lieutenants, do do 39	14	8	2	-	115	4	
Majors, north do 39	3	14	4	-	43	4	
Captains, do do 39	2	11	7	-	23	6	
Staff, do do 39	1	-	-	-	14	4	
Lieutenants, do do 39	12	9	2	-	111		
Non-commissioned officers, musicians, privates, servants, and washerwomen, south of latitude 40°	370	-	6	-	277	4	
Non-commissioned officers, musicians, privates, servants, and washerwomen, north of latitude 40°	239	-	6	6	194	1	6
Captains, north of latitude 43°	1	-	-	-	12	2	4
Lieutenants, north of latitude 43°	2	9	4	8	19	1	4
Clerk to paymaster, headquarters	1	-	-	-	1	1	4
Hospital matron, do	1	-	-	-	-	6	
Hospital, do	1	-	-	-	16	4	
Offices of commandant and staff and commanding officer, headquarters	5	3	4	-	17	4	
Guard room, headquarters	1	-	-	-	10	4	
Mess room, do	1	-	-	-	1	6	
Armory do	1	-	-	-	15		
Guard room at navy yard, Washington	1	-	-	-	10	4	
Commanding officers' offices, Norfolk, Va., and Pensacola	2	3	4	-	6	8	
Guard rooms, do do	2	10	4	-	21		
Hospitals, do do	2	8	2	-	16	4	
Mess rooms, do do	2	1	6	-	3	4	
Commanding officers' offices, Philadelphia, New York, and Charlestown	3	4	-	-	12		
Guard rooms, Philadelphia, New York, and Charlestown	3	9	2	-	27	6	

FUEL.

For whom required.	Number.	Fuel for each.			Total fuel.		
		Cords.	Feet.	Inches.	Cords.	Feet.	Inches.
Hospitals, Philadelphia, New York, and Charlestown	3	12	-	-	36		
Mess rooms do do do	3	2	-	-	6		
Office of the assistant quartermaster, Philadelphia	1	-	-	-	4		
Commanding officer's office, Portsmouth, New Hampshire	1	-	[illegible]	-	4	2	8
Guard room, do do	1	-	-	-	9	4	8
Hospital, do do	1	-	-	-	12	4	
Mess room, do do	1	-	-	-	2	-	8
					1,162	3	6
Which, at $7 per cord, is - - $8,137 06							

Estimate of the expenses of the marine corps from 1st January to 30th June, 1845.

There will be required for the support of the quartermasters' department of the marine corps, from 1st January to 30th June, 1845, in addition to the balances remaining on hand on the 31st December, 1844, the sum of sixty-nine thousand six hundred and seventy one dollars and twenty-seven cents.

QUARTERMASTER'S DEPARTMENT.

1st. For provisions - - - - - - - - - -	$22,326 71
2d. For clothing - - - - - - - - - -	21,817 50
3d. For fuel - - - - - - - - - - -	8,137 06
4th. For military stores, repair of arms, pay of armorers, accoutrements, ordnance stores, flags, drums, fifes, and musical instruments - - - -	1,400 00
5th. For transportation of officers and troops, and for expenses of recruiting -	4,000 00
6th. For repair of barracks, and for rent of temporary barracks - - - -	3,000 00
7th. For contingencies, viz: freight, ferriage, toll, wharfage and cartage, compensation to judges advocate, per diem for attending courts martial and courts of inquiry, per diem to enlisted men on constant labor, house rent where no public quarters are assigned, the burial of deceased marines, printing, stationery, forage, postage, the pursuit of deserters, candles and oil, straw, barrack furniture, bed sacks, spades, axes, shovels, picks, carpenters' tools, and the keeping a horse for the messenger - - - -	8,990 00
	69,671 27

Respectfully submitted:

AUG. A. NICHOLSON,
Quartermaster Marine Corps.

PROVISIONS.

For whom required.	Enlisted men.	Washerwomen.	Matron.	Servants.	Clerks.	Total.	Rations per day, at 19 cents.	Rations per day, at 20 cents.	Amount.
Non-commissioned officers, musicians, privates, and washerwomen - -	514	34	1	-	-	549	1	-	$18,880 11
Clerks and officers' servants - -	-	-	-	68	8	76	-	1	2,751 20
Bounty for re-enlistment, agreeably to act of 2d March, 1833, two months' rations	60	-	-	-	-	60	1	-	695 40
									22,326 71

CLOTHING.

For whom required.	Enlisted men.	Servants.	Clerk.	Total.	Amount.
Non-commissioned officers, musicians, and privates, at $33 per annum - - - - - - -	1,156	-	-	1,156	$19,074 00
Officers' servants, at $33 per annum - - -	-	68	-	68	1,122 00
Paymaster's clerk, at $33 per annum - - - -	-	-	1	1	16 50
Bounty for re-enlistment agreeably to act of 2d March, 1833, two months' clothing - - - -	60	-	-	60	330 00
150 watch coats, at $8 50 each - - - - -	-	-	-	-	1,275 00
					21,817 50

FUEL.

For whom required.	Number.	Fuel for each.			Total fuel.		
		Cords.	Feet.	Inches.	Cords.	Feet.	Inches.
Brevet brigadier general - - - - -	1	-	-	-	18	2	
Lieutenant colonel, south of latitude 39° - -	1	-	-	-	13		
Major, do do 39 - -	1	-	-	-	13		
Captains, do do 39 - -	3	10	5	-	31	7	
Staff, do do 39 - -	3	13	-	-	39		
Lieutenants, do do 39 - -	14	3	2	-	115	4	
Majors, north do 39 - -	8	14	4	-	43	4	
Captains, do do 39 - -	2	11	7	-	23	6	
Staff, do do 39 - -	1	-	-	-	14	4	
Lieutenants, do do 39 - -	12	9	2	-	111		
Non-commissioned officers, musicians, privates, servants, and washerwomen, south of latitude 40° - -	370	-	6	-	277	4	

FUEL—Continued.

For whom required.	Number.	Fuel for each.			Total fuel.		
		Cords.	Feet.	Inches.	Cords.	Feet.	Inches.
Non-commissioned officers, musicians, privates, servants, and washerwomen, north of latitude 40° - -	239	-	6	6	194	1	6
Captains, north of latitude 43° - - - -	1	-	-	-	12	2	4
Lieutenants, do do 43 - - -	2	9	4	8	19	1	4
Clerk to paymaster, headquarters - - -	1	-	-	-	1	1	4
Hospital matron, do - - - -	1	-	-	-	-	6	
Hospital, do - - -	1	-	-	-	16	4	
Offices of commandant and staff and commanding officer, headquarters - - - - - - -	5	3	4	-	17	4	
Guard room, headquarters - - - -	1	-	-	-	10	4	
Mess room, do - - - - - -	1	-	-	-	1	6	
Armory, do - - - - - -	1	-	-	-	15		
Guard room at navy yard, Washington - - -	1	-	-	-	10	4	
Commanding officers' offices, Norfolk, Va., and Pensacola	2	3	4	-	6	8	
Guard rooms, do do -	2	10	4	-	21		
Hospitals, do do -	2	8	2	-	16	4	
Mess rooms, do do -	2	1	6	-	3	4	
Commanding officers' offices, Philadelphia, New York, and Charlestown - - - - - - -	3	4	-	-	12		
Guard rooms, Philadelphia, New York, and Charlestown	3	9	2	-	27	6	
Hospitals, do do do -	3	12	-	-	36		
Mess rooms, do do do -	3	2	-	-	6		
Office of the assistant quartermaster at Philadelphia -	1	-	-	-	4		
Commanding officer's office, Portsmouth, N. H. - -	1	-	-	-	4	3	8
Guard room, do - -	1	-	-	-	9	4	8
Hospital, do - -	1	-	-	-	12	4	
Mess room, do - -	1	-	-	-	2	-	8
Which, at $7 per cord, is - - $8,137 06					1,162	3	6

No. 10.

Pension Office, *November* 23, 1843.

Sir: In obedience to the 3d section of the act of Congress of the 10th July, 1832, entitled "An act for the regulation of the navy and privateer pension and navy hospital funds," I have the honor to transmit, herewith, the following lists:

1. A list of persons who are now on the rolls of invalid navy pensioners.
2. A list of widows who have received the benefits of the act of June 30, 1834, and whose pensions have not yet expired.
3. A list of widows who have received the benefits of the act of March 3, 1837, since November 19, 1842.
4. A list of orphans who have received the benefits of the act of March 3, 1837, since November 19, 1842.

Of the appropriations for paying navy pensions due on the first of January, 1844, the amount in the Treasury will be sufficient to meet all payments due at that time.

There is now in the Treasury for paying invalids a balance of $26,052; for paying widows' pensions, under the act of June 30, 1834, $3,000; and for the satisfaction of claims under the act of March 3, 1837, $10,393.

On the 7th of September last, I had the honor of transmitting to you an estimate of the amount which will be required to pay navy pensions on the 31st December, 1844, and 30th June, 1845; and on the 11th of that month I submitted an estimate of the amount which will be necessary to pay those pensions on the 30th June, 1844.

We shall require for the first half year of 1844, to pay invalid navy pensions, $20,000; to pay widows, under the act of June 30, 1834, $3,000; and widows and orphans' claims, under the act of March 3, 1837, $8,000. The like sums will be required to pay those classes of pensions on the 31st December, 1844, and an equal amount will be necessary on the 30th June, 1845, as stated in my estimates of September last, already alluded to.

The only stocks now belonging to the navy pension fund are 700 shares of the Bank of Washington, the nominal value of which is $14,000, and stock of the Union Bank of Georgetown, the nominal value of which is $8,700. The last-mentioned institution is now closing its concerns, and as soon as collections can be made the directors will pay from the dividends of its capital stock the amount due to the navy pension fund. The stock of the Bank of Washington cannot now be sold to advantage, and the amount of interest which it yields is so inconsiderable that I have not introduced it into the present report as available.

I have the honor to be, very respectfully, your obedient servant,

J. L. EDWARDS,
Commissioner of Pensions.

Hon. David Henshaw,
Secretary of the Navy.

Alphabetical list of invalid navy pensioners, complete to the 23d of November, 1843.

Names of pensioners.	Rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
Samuel Abbott	Seaman	March 1, 1815	$5 00	April 23, 1800.
Zephaniah Allen	Marine	March 1, 1801	3 00	Do.
George Adams	Quartergunner	Dec. 31, 1836	5 62½	Do.
George Alexander	Ordinary seaman	July 19, 1814	8 00	Do.
William Adams	Seaman	July 25, 1838	3 00	Do.
Joseph Ashley	Ordinary seaman	Dec. 18, 1835	2 50	Do.
James Allcom	Sailingmaster	January 1, 1815	20 00	Do.
Robert Andrews	Quartergunner	August 1, 1829	4 50	Do.
Thomas Austin	Yeoman	December 7, 1838	7 50	Do.
John Adams	Seaman	Feb. 17, 1736	6 00	Do.
Alexander Adams	Seaman	October 6, 1812	3 00	Do.
Gabriel Anderson	Seaman	August 19, 1835	1 50	Do.
John Anderson	Captain of hold	October 21, 1841	1 87	Do.
James Allen	Seaman	June 2, 1843	4 00	Do.
William Allen	Seaman	January 1, 1839	5 00	March 1, 1843.
Nathan Burr	Quartergunner	Dec. 30, 1814	4 50	April 23, 1800.
Samuel Bryant	Seaman	March 5, 1830	3 00	Do.
John Brown	Seaman	July 1, 1829	6 00	Do.
Peter Barnard	Ordinary seaman	December 1, 1814	4 00	Do.
John Brannan	Seaman	June 28, 1815	5 00	Do.
John Beatty	Marine	June 1, 1830	4 00	Do.
Luke Brown	Seaman	July 5, 1834	3 00	Do.
John Bevins	Quartergunner	Feb. 24, 1837	7 50	Do.
Isaac Bassett	Ordinary seaman	May 15, 1814	5 00	Do.
John Bostrom	Quartergunner	May 30, 1834	3 00	Do.
Frederick Boyer	Sergeant marine corps	Sept. 5, 1834	2 25	Do.
James Bird	Seaman	Nov. 7, 1828	6 00	Do.
John Burnham	Master's mate	Dec. 10, 1813	9 00	Do.
John Butler	Seaman	Nov. 22, 1815	5 00	Do.
John Berry	Master-at-arms	March 18, 1835	4 50	Do.
John Brown, 4th	Seaman	August 31, 1825	3 00	Do.
Edward Berry	Seaman	July 4, 1837	4 50	Do.
Lloyd J. Bryan	Passed midshipman	January 22, 1837	3 12½	Do.
James Bantam	Ordinary seaman	July 5, 1833	4 00	Do.
James Bell	Seaman	August 23, 1823	6 00	Do.
Godfrey Bowman	Seaman	Sept. 10, 1813	6 00	Do.
Jonathan Bulkley	Midshipman	June 17, 1834	9 00	Do.
Edward Barker	Marine	May 18, 1836	3 50	Do.
James Barron	Captain	June 22, 1807	25 00	Do.
John Baxter	Seaman	Feb. 28, 1819	6 00	Do.
Peter Berge	Captain's steward	May 19, 1834	6 00	Do.
John Brumley	Seaman	September 1, 1826	6 00	Do.
William Barker	Marine	July 1, 1802	6 00	Do.
William Baggs	Marine	March 1, 1814	3 00	Do.
George Boyle	Seaman	Nov. 21, 1837	4 00	Do.
John Bruce	Quartergunner	November 1, 1826	9 00	Do.
William Bain	Quartergunner	October 22, 1833	3 50	Do.
David C. Bunnell	Seaman	April 27, 1813	3 00	Do.
Thomas Bowden	Quartermaster	December 7, 1837	4 00	Do.
Henry S. Baker	Seaman	Dec. 11, 1838	4 50	Do.
Robert Berry	Seaman	June 22, 1829	6 00	Do.
Joseph Barrett	Quarter gunner	April 17, 1813	9 00	Do.
John Bennett	Seaman	Dec. 14, 1814	6 00	Do.
James Blake	Ordinary seaman	July 26, 1822	5 00	Do.
Alfred Batts	Ordinary seaman	October 24, 1833	5 00	Do.
George Bennett	Ordinary seaman	Sept. 16, 1839	2 50	Do.

LIST—Continued.

Names of pensioners.	Rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
Lemuel Bryant	Ordinary seaman	August 1, 1814	$8 00	April 23, 1800.
Samuel Bosworth	Seaman	July 3, 1823	6 00	Do.
James Barker	Quartermaster	April 20, 1836	8 00	Do.
Junius J. Boyle	Midshipman	Nov. 22, 1823	4 75	Do.
Thomas Bartlett	Seaman	Nov. 24, 1834	6 00	Do.
William B. Brown	Gunner	July 4, 1835	2 50	Do.
Edmund Brett	Marine	June 12, 1815	3 00	Do.
Robert Butler	Quartergunner	April 30, 1835	3 75	Do.
Robert Blair	Seaman	January 1, 1832	6 00	Do.
Samuel Butler	Quartergunner	August 28, 1815	8 00	Do.
Thomas Buchanan	Marine	June 4, 1829	3 00	Do.
Thomas J. Clark	Carpenter's mate	April 29, 1839	2 37½	Do.
Horace Carter	Landsman	February 26, 1837	2 00	Do.
John Clark	Boatswain's mate	January 15, 1838	7 12½	Do.
Robert Carson	Ordinary seaman	June 26, 1821	5 00	Do.
Leonard Chase	Ordinary seaman	August 1, 1828	5 00	Do.
John Clements	Seaman	Dec. 29, 1812	6 00	Do.
Michael Collins	Seaman	April 22, 1834	4 50	Do.
Abraham Caswell	Ordinary seaman	Sept. 30, 1838	2 50	Do.
David Conner	Lieutenant	May 23, 1815	16 66⅔	Do.
Daniel H. Cole	Marine	Dec. 27, 1833	3 00	Do.
John S. Chauncey	Midshipman	Sept. 30, 1817	4 75	Do.
William Cook	Cabin cook	June 30, 1836	4 50	Do.
James Cole	Seaman	May 1, 1823	5 00	Do.
Horatio N. Crabb	First lieut. marine corps	January 1, 1831	7 50	Do.
John Conklin	Seaman	Dec. 31, 1837	3 00	Do.
David Christie	Marine	January 1, 1841	4 00	Do.
Enos B. Childs	Midshipman	April 2, 1823	9 50	Do.
Nathaniel Covill	Quartergunner	January 1, 1832	9 00	Do.
Nathaniel Chapman	Quartergunner	June 10, 1815	9 00	Do.
George Cornell	Captain's mate	Sept. 10, 1813	9 00	Do.
John C. Champlin	Seaman	May 21, 1831	6 00	Do.
John Clark	Seaman	May 31, 1825	3 00	Do.
Thomas R. Clark	Ordinary seaman	February 18, 1823	3 75	Do.
John Cole	Ordinary seaman	February 6, 1832	5 00	Do.
John Clough	Sailingmaster	June 4, 1829	15 00	Do.
Edward Cardevan	Seaman	February 28, 1836	3 00	Do.
Francis Covenhoven	Ordinary seaman	June 22, 1807	3 75	Do.
Stephen Champlin	Lieutenant	Sept. 3, 1814	10 00	Do.
R. B. Cunningham	Lieutenant	March 25, 1840	12 50	Do.
R. C. Cogdell	Passed midshipman	February 24, 1839	6 00	March 3, 1837.
Robert Cathcart	Seaman	Sept. 20, 1816	6 25	April 23, 1800.
John Collins	Seaman	February 9, 1813	6 00	Do.
George Coomes	Seaman	July 1, 1825	8 00	Do.
William Cantrill	Marine	April 8, 1830	2 00	Do.
Edward Carr	Seaman	May 13, 1835	6 00	Do.
William Clark	Ordinary seaman	August 29, 1842	5 00	Do.
John Conklin	Ordinary seaman	August 8, 1840	5 00	Do.
John Carrick	Landsman	Sept. 16, 1842	4 00	Do.
John Collins	Seaman	February 28, 1839	3 00	Do.
William Chappell	Boatswain's mate	June 7, 1843	9 50	Do.
William Dunbar	Seaman	May 31, 1840	4 50	Do.
Richard Dunn	Seaman	January 1, 1829	6 00	Do.
James Dixon	Seaman	Nov. 11, 1835	3 00	Do.
Daniel Danvers	Marine	October 22, 1835	3 00	Do.
Marmaduke Dove	Sailingmaster	April 20, 1833	5 00	Do.
Stillman Dodge	Ordinary seaman	May 1, 1831	3 33⅓	Do.

LIST—Continued.

Names of pensioners.	Rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
John Downes	Master commandant	Nov. 28, 1813	$10 00	April 23, 1800.
John A. Dickason	Carpenter	August 19, 1835	3 33⅓	Do.
Timothy Donigan	Ordinary seaman	April 27, 1837	2 50	Do.
William Dunn	Gunner	October 8, 1835	10 00	Do.
Joseph Dalrymple	Seaman	Feb. 24, 1814	4 50	Do.
Owen Deddolph	Gunner	June 25, 1814	5 00	Do.
Matthias Douglass	Seaman	April 23, 1814	10 00	Do.
James Dunham	Gunner	July 4, 1828	5 00	Do.
John Daniels	Quartermaster	September 7, 1816	9 00	Do.
John Dunn	Marine	July 1, 1818	3 00	Do.
John Davidson	Lieutenant	March 1, 1801	20 00	Do.
Samuel Daykin	Marine	October 22, 1834	3 00	Do.
John Diragan	Seaman	Dec. 22, 1815	5 00	Do.
James Darley	Ordinary seaman	March 1, 1838	5 00	Do.
William Darrington	Yeoman	October 18, 1841	3 75	Do.
Jesse D. Davis	Ordinary seaman	Sept. 2, 1843	5 00	Do.
Thomas Edwards	Quartermaster	January 1, 1823	9 00	Do.
Standish F. Edwards	Seaman	May 11, 1837	3 00	Do.
Francis Elliott	Marine	April 20, 1838	3 50	Do.
Ebenezer Evans	Seaman	March 2, 1813	6 00	Do.
Jesse Elam	Marine	August 1, 1828	6 00	Do.
William Evans	Marine	May 1, 1827	3 00	Do.
Abner Enos	Master's mate	June 4, 1830	6 00	Do.
Gardner Edmonds	Ordinary seaman	June 4, 1814	5 00	Do.
D. S. Edwards	Surgeon's mate	June 28, 1822	7 50	Do.
James Eddo	Captain forecastle	January 16, 1835	1 75	Do.
Alvin Edson	First lieut. marine corps	Feb. 6, 1832	7 50	Do.
Thomas English	Ordinary seaman	May 14, 1832	5 00	Do.
George Edwards	Boy, first class	May 21, 1837	4 00	Do.
Francis H. Ellison	Sailingmaster	Dec. 27, 1830	15 00	Do.
Henry Edgar	Boatswain's mate	Sept. 19, 1843	9 50	Do.
Nicholas T. Farrell	Marine	May 10, 1830	3 00	Do.
William Farrell	Seaman	June 4, 1829	6 00	Do.
Alfred Fisher	Seaman	May 15, 1835	5 00	Do.
Warren Fogg	Marine	June 1, 1813	87½	Do.
Jackson Flood	Seaman	July 7, 1837	6 00	Do.
James Furguson	Sailingmaster	Feb. 19, 1827	10 00	Do.
Andrew W. Fleming	Seaman	Dec. 20, 1839	4 50	Do.
Robert Forsaith	Marine	May 18, 1799	3 00	Do.
William Flagg	Lieutenant	October 31, 1800	18 75	Do.
John Fallerhee	Landsman	August 1, 1827	4 00	Do.
George Fitzgerald	Seaman	October 11, 1838	2 00	Do.
Michael Fitzpatrick	Master-at-arms	June 4, 1829	9 00	Do.
Moses French	Seaman	April 14, 1834	6 00	Do.
Peter Foley	Marine	June 27, 1837	3 50	Do.
William Fitzgerald	Seaman	Dec. 31, 1836	6 00	Do.
John Falvey	Seaman	August 29, 1842	3 00	Do.
Henry Fry	Purser	January 1, 1838	20 00	Aug. 29, 1842.
George Fields	Gunner's mate	January 28, 1841	4 75	April 23, 1800.
L. C. F. Fatio	Midshipman	March 25, 1825	2 37½	Do.
Benjamin Franklin	Seaman	January 1, 1840	6 00	June 1, 1842.
William M. Goodshall	Seaman	July 15, 1825	6 00	April 23, 1800.
Chester Goodell	Ordinary seaman	Dec. 12, 1834	3 00	Do.
James Good	Seaman	January 1, 1829	12 00	Do.
Anthony Gerome	Seaman	January 1, 1832	6 00	Do.
William Gregory	Marine	May 28, 1830	4 00	Do.
Samuel H. Green	Quartermaster	January 1, 1819	9 00	Do.

LIST—Continued.

Names of pensioners.	Rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
John Geyer	Seaman	April 6, 1815	$6 00	April 2, 1816.
Daniel Gardner	Ordinary seaman	March 28, 1814	2 50	April 23, 1800.
Anthony Gale	Lieut. col. marine corps	January 5, 1835	25 00	Do.
John Grant	Seaman	May 20, 1813	6 00	Do.
William Gunnison	Ordinary seaman	Nov. 24, 1833	5 00	Do.
James Glass	Sergeant marine corps	October 24, 1836	3 25	Do.
James Grant	Seaman	April 9, 1829	8 00	Do.
John Granso	Captain maintop	March 3, 1838	3 50	Do.
John Grant	Ordinary seaman	July 1, 1831	4 00	Do.
Peter Green	Seaman	April 3, 1827	5 00	Do.
William Gillen	Seaman	January 1, 1832	6 00	Do.
Jeremiah Gardner	Ordinary seaman	January 14, 1818	5 00	Do.
Richard Gilbody	Ordinary seaman	January 14, 1826	4 00	Do.
Amaziah Goodwin	Seaman	January 1, 1840	6 00	Do.
Jacob Greaves	Seaman	January 1, 1840	8 00	Aug. 29, 1842.
Joshua H. Goodwin	Seaman	Nov. 13, 1843	6 00	April 23, 1800.
James Hatch	Quartergunner	July 1, 1814	12 00	Do.
William Herringbrook	Seaman	Feb. 18, 1814	6 00	Do.
John Hogan	Seaman	March 4, 1830	3 00	Do.
John J. Hardy	Seaman	June 25, 1813	6 00	Do.
John Harris	Quartergunner	August 1, 1827	4 50	Do.
John Hussey	Ordinary seaman	January 1, 1832	5 00	Do.
Simon Hillman	Ordinary seaman	July 3, 1815	4 00	Do.
Horatio N. Harrison	Passed midshipman	July 15, 1838	6 50	Do.
Elijah L. Harris	Marine	Sept. 25, 1833	3 00	Do.
John Hamilton	Seaman	May 1, 1827	6 00	Do.
John Hoxse	Seaman	August 15, 1800	8 50	Do.
Samuel F. Holbrook	Carpenter	Sept. 30, 1820	5 00	Do.
Isaac Harding	Seaman	May 9, 1834	5 00	Do.
Garrett Hendricks	Seaman	August 9, 1834	6 00	Do.
Uriah Hanscomb	Ordinary seaman	October 16, 1799	6 00	Do.
Samuel Hambleton	Purser	Sept. 10, 1813	20 00	Do.
John Hall	Quartermaster	October 20, 1830	4 50	Do.
Roswell Hale	Ordinary seaman	Dec. 25, 1819	5 00	Do.
Thomas Huntley	Seaman	August 31, 1837	3 00	Do.
Ephraim Hathaway	Landsman	June 15, 1838	4 00	Do.
J. L. C. Hardy	Midshipman	July 31, 1821	4 75	Do.
Alexander Hamilton	Boatswain's mate	May 31, 1838	7 12½	Do.
William Hamilton	Seaman	July 1, 1829	6 00	Do.
Joshua Howell	Ordinary seaman	June 30, 1836	5 00	Do.
William L. Hudson	Sailingmaster	July 6, 1817	15 00	Do.
Elias Hughes	Ordinary seaman	August 28, 1837	5 00	Do.
Robert Hazlett	Musician marine corps	Dec. 12, 1836	2 00	Do.
Henry Hampton	Ordinary seaman	June 14, 1840	1 66⅔	Do.
John Hamilton	Seaman	October 5, 1837	6 00	Do.
Martin Higgins	Coal heaver	Dec. 14, 1842	2 50	Do.
William Hampson	Marine	August 29, 1842	2 62½	Do.
Michael Johnson	Seaman	January 31, 1812	3 00	Do.
David Jenkins	Seaman	August 1, 1828	6 00	Do.
Richworth Jordan	Seaman	March 15, 1836	6 00	Do.
Gilbert Jones	Ordinary seaman	June 30, 1815	2 50	Do.
James Jackson	Seaman	March 4, 1816	5 00	Do.
Thomas Ap C. Jones	Lieutenant	Dec. 14, 1814	25 00	Do.
William Jones	Boy	August 24, 1814	2 25	Do.
Thomas Irwin	Private marine corps	January 31, 1837	1 75	March 3, 1837.
Lewis Jones	Seaman	October 27, 1835	6 00	April 23, 1800.

LIST—Continued.

Names of pensioners.	Rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
John Joyce	Ordinary seaman	August 30, 1839	$3 75	April 23, 1900.
Ichabod Jackson	Seaman	January 25, 1837	4 50	Do.
John Johnson	Seaman	March 28, 1814	6 00	Do.
Joseph Jackson	Cook	October 29, 1839	4 50	Do.
Joseph Jennet	Captain of mizentop	June 12, 1838	2 33⅓	Do.
Thomas Jackson, 2d	Quartermaster	June 1, 1813	9 00	Do.
Sylvester Jameson	Seaman	August 1, 1828	6 00	Do.
Edward Ingram	Boatswain	April 1, 1831	5 00	Do.
James Jeffers	Ordinary seaman	Dec. 7, 1805	6 00	Do.
Henry Jackson	Captain foretop	Sept. 20, 1836	3 75	Do.
Henry Irwin	Marine	Feb. 20, 1837	1 75	Do.
John Jones	Seaman	Sept. 16, 1842	3 00	Do.
Nicholas Kline	Sergeant marine corps	January 1, 1832	5 00	Do.
William C. Keene	Master-at-arms	Sept. 10, 1813	9 00	Do.
William Kinnear	Marine	April 3, 1834	3 00	Do.
Daniel Kleiss	Ordinary seaman	May 6, 1829	5 00	Do.
Andrew Key	Boatswain's mate	July 9, 1839	19 00	April 16, 1816.
James Kelley	Marine	August 24, 1814	4 50	April 23, 1800.
John Kiggan	Ordinary seaman	April 30, 1838	2 50	Do.
Henry Keeling	Gunner	August 30, 1834	5 00	Do.
John Kenney	Quartergunner	July 1, 1825	4 50	Do.
George Kensinger	Master-at-arms	May 22, 1819	9 00	Do.
Thomas Kelley	Seaman	April 25, 1815	4 00	Do.
Joseph Kelley	Seaman	October 31, 1835	4 50	Do.
John Keegan	Quartermaster	March 27, 1830	6 00	Do.
John F. Kidder	Apprentice	March 1, 1842	1 75	
John Luscomb	Ordinary seaman	January 15, 1838	2 50	Do.
John Lang	Seaman	July 27, 1837	6 00	Do.
Edward Libbis	Ordinary seaman	June 11, 1836	1 66⅔	Do.
John Lewis	Boatswain's mate	January 1, 1832	9 00	Do.
John Levely	Seaman	April 23, 1835	6 00	Do.
Henry P. Leslie	Carpenter	Feb. 18, 1840	5 00	March 3, 1837.
James Lloyd	Marine	April 5, 1834	2 00	April 23, 1800.
Isaac Langley	Ordinary seaman	Dec. 1, 1814	5 00	Do.
John Lloyd	Marine	June 8, 1819	3 09	Do.
John Lagrange	Seaman	Nov. 30, 1834	4 50	Do.
Robert Lewis	Steward	Sept. 5, 1830	6 75	Do.
Richard Lee	Quartermaster	July 1, 1820	6 00	Do.
Timothy Lane	Cook	March 25, 1816	8 00	Do.
Peter Lewis	Ordinary seaman	July 30, 1837	5 00	Do.
John Leonard	Seaman	July 1, 1829	9 00	Do.
John G. Lanman	Quartergunner	June 20, 1836	7 50	Do.
John Lynch	Quartermaster	Dec. 7, 1838	9 00	Do.
Nathaniel Lord	Quartermaster	Feb. 26, 1843	4 50	Do.
Edward Martin	Seaman	March 3, 1837	3 00	Do.
Jacob Marks	Marine	June 30, 1810	43¾	Do.
Richard Merchant	Marine	June 30, 1824	1 75	Do.
Charles Morris	Lieutenant	August 19, 1812	12 50	Do.
James Mount	Sergeant marine corps	June 7, 1837	4 87½	Do.
James Moses	Purser's steward	April 23, 1816	9 00	Do.
James McDonald	Corporal marine corps	Dec. 31, 1814	2 25	Do.
Joseph Marks	Seaman	May 1, 1827	6 00	Do.
Edward Myers	Seaman	May 27, 1837	3 00	Do.
Thomas Murdock	Seaman	June 30, 1836	6 00	Do.
William McKeever	Ordinary seaman	October 14, 1835	2 50	Do.
John Munroe	Seaman	July 22, 1835	4 50	Do.

LIST—Continued.

Names of pensioners.	Rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
John Meigs	Seaman	July 1, 1819	$10 00	April 23, 1800.
John McGarr	Steward	Nov. 11, 1832	4 50	Do.
J. T. McLaughlin	Passed midshipman	February 8, 1837	9 37½	Do.
M. F. Maury	Lieutenant	October 18, 1839	12 50	Do.
Archibald Moffat	Ordinary seaman	June 1, 1832	5 00	Do.
Enoch M. Miley	Quartergunner	March 28, 1814	8 00	Do.
Peter McMahon	Ordinary seaman	Nov. 2, 1807	6 00	Do.
Samuel Meade	Seaman	October 19, 1837	3 00	Do.
Andrew Mattison	Seaman	Sept. 10, 1813	5 00	Do.
Patrick Murphy	Ordinary seaman	October 19, 1836	5 00	Do.
Giles Manchester	Ordinary seaman	May 1, 1827	5 00	Do.
James Merrill	Ordinary seaman	October 23, 1819	5 00	Do.
Colton Murray	Boatswain's mate	August 1, 1831	9 00	Do.
John McMahon	Ordinary seaman	July 9, 1836	5 00	Do.
George Marshall	Gunner	March 31, 1825	2 50	Do.
William P. McArthur	Midshipman	January 15, 1838	4 75	Do.
Matthias McGill	Seaman	May 28, 1814	8 00	Do.
Samuel Miller	Captain marine corps	April 24, 1814	10 00	Do.
John Marston, jr.	Midshipman	Dec. 31, 1814	4 75	Do.
William Mervine	Midshipman	Nov. 28, 1812	3 16⅔	Do.
John Myrick	Gunner	August 7, 1837	5 00	Do.
John Metzer	Seaman	Feb. 26, 1839	3 00	Do.
John Moore	Seaman	January 9, 1838	4 50	Do.
James McDonald	Seaman	Dec. 31, 1826	3 00	Do.
John Malprine	Landsman	February 1, 1839	3 00	Do.
Patrick McLaughlin	Ordinary seaman	Nov. 1, 1815	5 00	Do.
John Myers	Seaman	Nov. 1, 1828	6 00	Do.
Samuel McIsaacs	Boy	July 30, 1814	5 00	Do.
William Moran	Seaman	Dec. 5, 1815	6 00	Do.
Enos Marks	Ordinary seaman	Feb. 16, 1815	5 00	Do.
John H. McNeale	Seaman	June 1, 1832	3 00	Do.
John Mitchell	Quartermaster	June 11, 1832	8 00	Do.
Matthew McMurray	Seaman	Sept. 1, 1827	6 00	Do.
Thomas Miller	Seaman	October 23, 1829	4 00	Do.
John Moore	Seaman	Dec. 4, 1817	6 00	Do.
William Middleton	Seaman	January 1, 1837	8 00	Do.
Henry J. Mercier	Ordinary seaman	May 20, 1837	1 25	Do.
John McLaughlin	Quartergunner	October 3, 1842	7 50	Do.
Joseph Millet	Boatswain's mate	July 20, 1843	4 75	Do.
James Nickerson	Seaman	January 15, 1815	6 00	Do.
James Nagle	Seaman	June 30, 1834	5 00	Do.
John F. Noyer	Marine	July 1, 1826	5 00	Do.
John Nugent	Seaman	August 14, 1813	6 00	Do.
Francis B. Nichols	Midshipman	June 1, 1818	4 75	Do.
William Napier	Corporal marine corps	July 1, 1826	4 00	Do.
David Newbury	Ordinary seaman	April 15, 1836	2 00	Do.
William Newton	Ordinary seaman	Sept. 11, 1814	1 25	Do.
John Neilson	Quartergunner	January 1, 1832	9 00	Do.
John Nicholson	Ordinary seaman	August 30, 1842	5 00	Do.
Josiah Needham	Quartergunner	May 4, 1842	7 50	Do.
Asael Owens	Seaman	January 22, 1838	3 00	Do.
Samuel Odiorne, jr.	Seaman	Dec. 24, 1825	6 00	Do.
Isaac Owmans	Seaman	June 26, 1821	6 00	Do.
Patrick O'Malley	Ordinary seaman	October 10, 1842	2 50	Do.
Charles T. Platt	Lieutenant	June 4, 1829	25 00	Do.
Stephen Phyfer	Ordinary seaman	April 4, 1825	7 00	Do.

LIST—Continued.

Names of pensioners.	Rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
Peter Pierson	Seaman	March 20, 1836	$6 00	April 23, 1800.
James Perry	Ship's corporal	Sept. 1, 1827	9 00	Do.
Thomas Paine	Sailingmaster	Feb. 7, 1834	20 00	Do.
William Perry	Seaman	April 9, 1825	6 00	Do.
Charles Pastine	Seaman	March 4, 1815	5 00	Do.
Neal Patterson	Seaman	July 1, 1820	8 00	Do.
John Peterson	Ordinary seaman	Sept. 10, 1813	5 00	Do.
John Percival	Lieutenant	Dec. 22, 1825	12 50	Do.
N. A. Prentiss	Sailingmaster	Nov. 30, 1814	10 00	Do.
Edward Power	Ordinary seaman	May 27, 1834	5 00	Do.
Henry Powell	Seaman	Feb. 10, 1840	3 00	Do.
Usher Parsons	Surgeon	Feb. 7, 1816	12 50	Do.
Thomas B. Parsons	Seaman	Sept. 1, 1808	9 00	Do.
Payne Perry	Seaman	April 6, 1815	6 00	April 2, 1816.
Joseph Peck	Seaman	Oct. 19, 1836	2 50	April 23, 1800.
Charles Perry	Seaman	Nov. 30, 1837	4 50	Do.
John Price	Seaman	May 11, 1835	6 00	Do.
John Piner	Ordinary seaman	Nov. 6, 1828	5 00	Do.
Daniel Peck	Seaman	July 1, 1829	6 00	Do.
John Price	Seaman	August 30, 1842	6 00	Do.
Richard Parker	Seaman	July 31, 1842	6 00	Do.
David Quill	Quartermaster	Feb. 20, 1815	5 00	Do.
John Randall	Marine	Sept. 2, 1805	3 00	Do.
John Roberts	Seaman	June 1, 1813	3 00	Do.
John Robinson	Master's mate	Jan. 31, 1814	1 25	Do.
James Reid	Ordinary seaman	Jan. 14, 1838	5 00	Do.
Thomas Richie	Seaman	May 14, 1839	3 00	Do.
James Roberts	Quartergunner	April 14, 1832	1 87½	Do.
Jasper Read	Seaman	March 28, 1814	3 00	Do.
John Rogers	Captain's yeoman	May 18, 1832	4 50	Do.
John Romeo	Ordinary seaman	April 6, 1838	5 00	Do.
John Revel	Ordinary seaman	August 20, 1833	2 50	Do.
Burnet Ragan	Landsman	June 6, 1838	2 00	Do.
James Rankin	Seaman	June 8, 1839	4 50	Do.
James Rogers	Sailingmaster	July 27, 1815	15 00	Do.
James C. Reid	Ordinary seaman	May 5, 1837	2 50	Do.
Alonzo Rowley	Ordinary seaman	March 15, 1836	5 00	Do.
Edward Ross	Boy	January 1, 1827	3 00	Do.
Edward Rowland	Ordinary seaman	Sept. 11, 1814	5 00	Do.
Rosnanti Rhodes	Seaman	Dec. 5, 1815	6 00	Do.
Samuel Riddle	Seaman	June 30, 1836	3 00	Do.
Thomas Riley	Gunner	June 23, 1837	7 50	Do.
B. S. Randolph	Midshipman	Oct. 7, 1815	6 00	Do.
Daniel Riggs	Ordinary seaman	May 18, 1836	3 75	Do.
Samuel Rose	Seaman	May 24, 1836	4 50	Do.
Nathan Rolfe	Seaman	Dec. 14, 1813	6 00	Do.
John Rice	Seaman	July 19, 1830	6 00	Do.
William Robinson	Marine	June 15, 1817	6 00	Do.
John Riley	Marine	July 1, 1831	3 00	Do.
John Richards	Quartergunner	Oct. 20, 1829	9 00	Do.
Benjamin Richardson	Master's mate	Oct. 8, 1829	10 00	Do.
John Richmond	Marine	July 31, 1816	1 75	Do.
Stephen B. Roath	Gunner's mate	Aug. 22, 1842	4 75	Do.
Robert Ramsey	Steward	Dec. 30, 1837	5 00	March 3, 1843.
Lewis Reineburg	Private marine corps	Jan. 28, 1843	1 75	April 23, 1800.
Nathaniel Staples	Seaman	May 1, 1833	3 00	Do.

LIST—Continued.

Names of pensioners.	Rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
Patrick Scanton	Ordinary seaman	January 1, 1811	$6 00	April 23, 1800.
Benjamin Stevens	Master's mate	June 27, 1814	10 00	Do.
Stephen Simpson	Marine	Nov. 16, 1835	3 50	Do.
William Smith	Ordinary seaman	June 1, 1827	5 00	Do.
Eli Steward	Master's mate	May 20, 1814	7 00	Do.
Harman Sutton	Seaman	July 1, 1829	3 00	Do.
Thomas J. Still	Marine	January 1, 1832	3 00	Do.
Charles Sheeter	Boatswain's mate	Nov. 1, 1832	6 00	Do.
Thomas Smith	Seaman	April 5, 1839	2 00	Do.
Joseph Smith	Boatswain	Dec. 31, 1837	5 00	Do.
Alfred Smith	Ordinary seaman	Sept. 27, 1837	2 50	Do.
John Stevens	Quartermaster	May 21, 1831	4 50	Do.
Jeremiah Sullivan	Seaman	June 30, 1837	6 00	Do.
Thomas Smith	Boatswain	April 6, 1815	20 00	April 2, 1816.
Aaron Smith	Ordinary seaman	August 1, 1828	2 50	April 23, 1800.
Joseph Smith	Lieutenant	Sept. 11, 1814	18 75	Do.
John Smith, 5th	Seaman	May 5, 1837	3 00	Do.
William Stockdale	Marine	July 26, 1816	6 00	Do.
William Smart	Ordinary seaman	July 1, 1829	5 00	Do.
John Smith	Seaman	August 31, 1834	3 00	Do.
James Smith	Ordinary seaman	Dec. 2, 1837	2 50	Do.
James Shanklin	Ordinary seaman	June 1, 1813	2 50	Do.
Robert Spedden	Lieutenant	Dec. 5, 1823	25 00	Do.
William Smith	Sergeant marine corps	January 7, 1841	6 50	March 3, 1837.
John Strain	Seaman	Feb. 28, 1837	4 50	April 23, 1800.
James Spires	Ordinary seaman	May 5, 1837	3 75	Do.
John Smith	Boatswain	Dec. 31, 1827	5 00	Do.
John Scriver	Seaman	April 10, 1811	5 00	Do.
John Schrouder	Seaman	June 29, 1819	6 00	Do.
Horace B. Sawyer	Midshipman	June 3, 1813	4 75	Do.
Otis Sage	Corporal marine corps	Nov. 16, 1835	4 50	Do.
Samuel Spooner	Ordinary seaman	Oct. 15, 1838	1 66⅔	Do.
Jonas A. Stone	Seaman	April 4, 1829	9 00	Do.
Alexander Smith	Seaman	July 26, 1836	3 00	Do.
Thomas Stallings	Ordinary seaman	Nov. 7, 1826	2 50	Do.
Leonard Stevens	Sergeant marine corps	January 27, 1837	3 25	Do.
R. S. Suter	Midshipman	Dec. 16, 1814	9 50	Do.
James Stockwell	Seaman	Feb. 28, 1829	4 50	Do.
Charles Smith, 3d	Seaman	August 19, 1841	3 00	Do.
Frederick Smith	Captain forecastle	June 14, 1842	7 00	Do.
Russell Smith	Carpenter's mate	August 2, 1842	7 12½	Do.
Charles Staunton	Boatswain's mate	Feb. 19, 1838	9 50	Do.
Samuel Stevens	Seaman	August 16, 1843	1 50	Do.
Nehemiah Shockley	Seaman	Sept. 18, 1843	6 00	Do.
Thomas Smith	Ordinary seaman	January 23, 1843	3 33⅓	Do.
James Seawell	Seaman	August 31, 1843	4 50	Do.
Isaac Swann	Ordinary seaman	August 12, 1843	2 50	Do.
Lewis Thomas	Marine	May 11, 1839	2 66⅔	Do.
John Tarlton	Ordinary seaman	May 8, 1833	4 00	Do,
James Turnbull	Ordinary seaman	April 6, 1815	5 00	April 2, 1816.
Owen Taylor	Seaman	August 19, 1812	6 00	April 23, 1800.
B. R. Tinslar	Surgeon	January 31, 1830	6 50	Do.
Thomas Tindley	Seaman	April 6, 1815	3 00	April 2, 1816.
John Taylor	Quartermaster	May 31, 1839	8 00	April 23, 1800.
Jacob Tinkins	Marine	May 31, 1840	3 50	Do.
Samuel Taylor	Ordinary seaman	Nov. 30 1839	5 00	March 3, 1837.

LIST—Continued.

Names of pensioners.	Rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
George Tunstall	Seaman	April 14, 1836	$3 00	April 23, 1800.
Isaac Thomas	Marine	October 30, 1826	6 00	Do.
William Thompson	Ordinary seaman	May 20, 1826	7 50	Do.
James Thompson	Seaman	June 30, 1836	6 00	Do.
Julius Terry	Ordinary seaman	August 31, 1812	5 00	Do.
James Tull	Sergeant marine corps	June 29, 1816	5 00	Do.
Henry Townsend	Ordinary seaman	Dec. 18, 1814	5 00	Do.
David Thomas	Marine	January 1, 1806	3 00	Do.
Philip Tulley	Seaman	January 10, 1816	6 00	Do.
Peter Forley	Marine	January 27, 1837	3 50	Do.
George Turry	Boatswain	August 9, 1839	3 33⅓	Do.
Benjamin Underwood	Ordinary seaman	April 24, 1815	5 00	Do.
George Upham	Marine	July 12, 1816	3 00	Do.
Gabriel Van Horn	Marine	Dec. 23, 1837	3 50	Do.
William Venable	Boatswain's mate	May 2, 1834	4 75	Do.
John S. Vincent	Captain of the hold	April 5, 1843	1 75	
William Whitney	Seaman	Nov. 1, 1818	8 00	Do.
John A. Webster	Sailingmaster	Sept. 13, 1814	20 00	June 30, 1834.
Peter Woodbury	Quartermaster	March 18, 1813	9 00	April 23, 1800.
Robert Woods	Seaman	Dec. 31, 1836	3 00	Do.
Charles W. White	Ordinary seaman	Feb. 17, 1837	5 00	Do.
Reuben Wright	Carpenter's mate	August 30, 1814	8 00	Do.
Caleb J. Wiggins	Ordinary seaman	May 23, 1814	3 00	Do.
Henry R. Williams	Yeoman	August 2, 1840	7 50	March 3, 1837.
John Williams	Seaman	July 1, 1818	6 00	April 23, 1800.
Joseph Ward	Seaman	July 1, 1818	6 00	Do.
William Williams	Marine	July 9, 1838	3 50	Do.
William S. Welsh	Seaman	May 1, 1827	6 00	Do.
James Wilson	Quartermaster	July 1, 1817	9 00	Do.
James B. Wright	Quartermaster	May 1, 1831	9 00	Do.
Charles Weeks	Seaman	Feb. 23, 1830	6 00	Do.
Thomas Williamson	Surgeon	Dec. 31, 1835	15 00	Do.
Francis Williams	Landsman	Jan. 15, 1838	1 00	Do.
Job G. Williams	First lieut. marine corps	June 30, 1828	7 50	Do.
George Wiley	Seaman	March 1, 1837	3 00	Do.
John Waters	Seaman	Sept. 30, 1838	3 00	Do.
James Woodhouse	Seaman	March 17, 1836	6 00	Do.
George Wilson	Seaman	March 23, 1838	6 00	Do.
John Williams	First captain foretop	Sept. 9, 1836	1 87½	Do.
Jack Williams	Seaman	March 22, 1828	4 00	Do.
Daniel Watson	Carpenter's mate	May 10, 1838	4 75	Do.
Charles Wheeler	Seaman	October 3, 1836	3 00	Do.
Henry Ward	Quartergunner	May 27, 1833	9 00	Do.
Henry Walpole	Seaman	October 2, 1820	3 00	Do.
Henry Williams	Ordinary seaman	March 3, 1838	5 00	Do.
Solomon White	Seaman	Feb. 29, 1812	4 00	Do.
Thomas Ward	Captain foretop	Jan. 14, 1835	7 50	Do.
William Ward	Seaman	August 1, 1832	6 00	Do.
William Welsh	Ordinary seaman	January 1, 1822	2 50	Do.
Samuel E. Watson	Major marine corps	February 4, 1837	18 75	Do.
John Wright, 2d	Ordinary seaman	May 1, 1822	5 00	Do.
William A. Weaver	Midshipman	June 1, 1813	9 50	Do.
James Williamson	Armorer	Sept. 1, 1831	6 00	Do.
John Wright	Quartergunner	Nov. 7, 1836	5 62½	Do.
John Waters	Ordinary seaman	April 24, 1824	5 00	Do.
James Wines	Seaman	March 28, 1824	6 00	Do.

LIST—Continued.

Names of pensioners.	Rank.	Commencement of pension.	Monthly pension.	Acts of Congress under which allowed.
William Wicks	Ordinary seaman	August 4, 1813	$4 00	April 23, 1800.
Elias Wiley	Ordinary seaman	Sept. 10, 1813	2 50	Do.
William Wright	Seaman	August 31, 1832	3 00	Do.
Thomas Welsh	Quartergunner	Feb. 26, 1820	12 00	Do.
Samuel Williams	Quartermaster	Sept. 1, 1827	6 00	Do.
William Wagner	Quartergunner	Dec. 3, 1819	9 00	Do.
Daniel Whitehorn	Quartergunner.	June 21, 1842	7 50	Do.
John Williams	Ordinary seaman	May 1, 1843	2 50	Do.
Joshua Wyman	Seaman	Nov. 29, 1842	6 00	Do.
John Wolfenden	Seaman	March 3, 1843	8 58½	Do.
John J. Young	Lieutenant	May 21, 1829	25 00	Do.
Richard G. York	Seaman	Jan. 13, 1839	3 00	Do.

The number of invalid pensioners is 518; annual sum to pay them, $35,973 36.

Alphabetical list of widows who are now on the pension list under the act of June 30, 1834, *granting five years' pensions, complete to November* 23, 1843.

Names of the widows.	Names of their husbands.	Their husbands' rank.	Monthly allowance.	Time up to which they are to be paid, &c.
Ashton, Louisa	Gurdon C.	Lieutenant	$25 00	Commencing October 11, 1840, and terminating October 11, 1845.
Arlette, Mary E.	John C.	Marine	3 50	Commencing March 5, 1842, and terminating March 5, 1847.
Bacon, Sarah A.	Frederick A.	Passed midshipman.	12 50	Commencing May 1, 1839, and terminating May 1, 1844.
Barry, Mary	Thomas	Master	20 00	Commencing June 28, 1842, and terminating June 28, 1847.
Boyd, Mary A.	Thomas J.	Surgeon	30 00	Commencing March 26, 1839, and terminating March 26, 1844.
Boerum, Emily	William	Commander	30 00	Commencing November 2, 1842, and terminating November 2, 1847.
Cope, Isabella	John	Seaman	6 00	Commencing January 31, 1840, and terminating January 31, 1845.
Corlette, Susan	Edward	Ordinary seaman.	5 00	Commencing July 5, 1840, and terminating July 5, 1845.
Crawford, Mary	David R.	Passed midshipman.	25 00	Commencing July 26, 1841, and terminating July 26, 1846; increased from $12 50 per month, under the act of March 1, 1843.
Claxton, Rodolphine	Alexander	Captain	50 00	Commencing March 7, 1841, and terminating March 7, 1846.
Carpenter, Ann	Jacob	Gunner	10 00	Commencing March 8, 1842, and terminating March 8, 1847.
Chauncey, Catharine	Isaac	Captain	50 00	Commencing January 28, 1840, and terminating January 28, 1845.
Cox, Emma M.	John W.	Lieutenant	25 00	Commencing December 7, 1842, and terminating December 7, 1847.
Eaton, Susan	David	Gunner	10 00	Commencing August 15, 1840, and terminating August 15, 1845.

LIST—Continued.

Names of the widows.	Names of their husbands.	Their husbands' rank.	Monthly allowance.	Time up to which they are to be paid, &c.
Hart, Sarah Ann -	Benjamin F.	Purser -	$20 00	Commencing November 2, 1842, and terminating November 2, 1847.
Hull, Ann M. H. -	Isaac -	Captain -	50 00	Commencing February 13, 1843, and terminating February 13, 1848.
Hofford, Mary -	Lawrence -	Quartermaster	8 00	Commencing November 16, 1842, and terminating Nov. 16, 1847.
Lyne, Elizabeth B.	William B. -	Lieutenant -	25 00	Commencing May 1, 1841, and terminating May 1, 1846.
Mack, Catharine -	Jeremiah -	Gunner -	10 00	Commencing December 17, 1842, and terminating Dec. 17, 1847.
McCauley, Mary -	James -	Captain marine corps.	20 00	Commencing February 22, 1839, and terminating February 22, 1844.
Pease, Almira -	Levi -	Carpenter -	10 00	Commencing May 12, 1842, and terminating May 12, 1847.
Patterson, Geo. Ann	Daniel T. -	Captain -	50 00	Commencing August 25, 1839, and terminating August 25, 1844.
Palmer, Ann -	Morris -	Orderly serg't marine corps.	8 00	Commencing October 13, 1841, and terminating October 13, 1846.
Pinkham, Lydia H.	Alexander B.	Commander	30 00	Commencing July 23, 1843, and terminating July 23, 1848.
Rodgers, Minerva* -	John -	Captain -	50 00	Commencing August 1, 1838, and terminating August 1, 1843.
Ridgeway, Maria -	Ebenezer -	Commander	30 00	Commencing November 1, 1841, and terminating November 1, 1846.
Stinger, Rebecca S.	John -	Landsman -	4 00	Commencing July 15, 1839, and terminating July 15, 1844.
Sproston, Jane -	George S. -	Surgeon -	35 00	Commencing January 21, 1842, and terminating January 21, 1847.
Snowman, Julia -	Samuel -	Seaman -	6 00	Commencing October 5, 1841, and terminating October 5, 1846.
Stevens, Eliza -	Thos. Holdup	Captain -	50 00	Commencing January 21, 1841, and terminating January 21, 1846.
Stivers, Ann Maria -	Stephen D. -	Landsman -	4 00	Commencing April 22, 1839, and terminating April 22, 1844.
Thomas, Marg't M.	Richard -	Carpenter -	10 00	Commencing December 20, 1842, and terminating Dec. 20, 1847.
Underwood, Sarah J.	Joseph A. -	Lieutenant -	25 00	Commencing July 24, 1840, and terminating 24, 1845.
Voorhees, Harriet -	Ralph -	Commander	30 00	Commencing July 27, 1842, and terminating July 27, 1847.
Wainwright, M. M.	Robert D. -	Lieut.-colonel marine corps.	30 00	Commencing October 6, 1841, and terminating October 6, 1846.
Wilson, Mary Jane	Enoch -	Armorer -	9 00	Commencing July 27, 1841, and terminating July 27, 1846.
Williams, Elizabeth	William F. -	Seaman -	6 00	Commencing August 17, 1842, and terminating August 17, 1847.
Wood, Elizabeth -	Owen -	Marine -	3 50	Commencing May 9, 1843, and terminating May 9, 1848.
White, Mary Ann -	Samuel -	Carpenter -	10 00	Commencing August 20, 1843, and terminating August 20, 1848.
Woolsey, Ellen -	William G. -	Lieutenant -	25 00	Commencing October 20, 1840, and terminating October 20, 1845.
Weed, Julia* -	Elijah J. -	Captain marines.	20 00	Commencing March 5, 1838, and terminating March 5, 1843.

Number of widows, 41 ; annual amount of their pensions, $10,566.

* The pensions of Mrs. Minerva Rogers and Mrs Julia Weed have expired. The sums they received, under the act of March 3, 1837, were deducted from their pensions under the act of June 30, 1834.

Alphabetical list of orphans who have received the benefits of the act of the 3d of March, 1837, *since November,* 1842.

Names of the orphans.	Names of their fathers.	Their father's rank.	Monthly allow'nce.	Time up to which they were paid.
John Dever -	William . -	Landsman -	$4 00	Commenced March 1, 1839, and ended August 31, 1842.
Mary Noble and Philemon Noble.	Philemon -	Seaman -	3 00	Commenced July 28, 1800; Mary Noble paid to June 25, 1820; Philemon Noble paid to August 23, 1821.
Thomas O'Sullivan	John -	Purser's steward.	9 00	Commenced October 30, 1831, and ended August 31, 1842.
Joseph Stanwood & William Stanwood.	William -	Seaman -	4 00	Commenced August 31, 1800; Joseph Stanwood paid to February 22, 1820, and William Stanwood paid to May 22, 1821.

Alphabetical list of widows who have received the benefits of the act of the 3d of March, 1837, *since November,* 1842.

Names of the widows.	Names of their husbands.	Their husband's rank.	Monthly allowance.	Time up to which they were paid.
Burns, Elizabeth -	William W.	Sergeant of marines -	$6 50	Commencing 13th October, 1835, and ending 31st August, 1842.
Dougherty, Rebecca	James -	Seaman - -	5 00	Commencing 17th May, 1811, and ending 31st August, 1842.
Goddard, Grace H. -	John -	Surgeon - -	25 00	Commencing 31st August, 1802, and ending 31st August, 842.

Estimate of the amounts which will be required to pay navy pensions on the 1*st July,* 1844, 31*st December,* 1844, *and* 30*th June,* 1845.

	July 1, 1844.	Dec. 31, 1844.	July 1, 1845.
Invalid pensions - - - - -	$20,000	$20,000	20,000
Widows' pensions, under act of June 30, 1834	3,000	3,000	3,000
Widows and orphans' pensions, under act of 3d March, 1837 - - - -	8,000	8,000	8,000
	31,000	31,000	81,000

No. 11.

TREASURY DEPARTMENT,
Fourth Auditor's Office, November 18, 1843.

SIR: I have the honor to transmit, herewith, a statement showing the receipts and expenditures of the navy pension fund for the year ending 30th September, 1843, and its condition at that date.

I have the honor to be, sir, very respectfully, your obedient servant,

A. O. DAYTON.

Hon. DAVID HENSHAW,
Secretary of the Navy.

A statement showing the receipts and expenditures of the navy pension fund for the year ending the 30th September, 1843, *and its condition at that date.*

Dates.	Names and residence of agents, &c.		Amounts.
	I. Balance in the Treasury, to the credit of the fund, on the 1st October, 1842 - - - - - - - - - -		$39,823 37
	II. Amount received into the Treasury since the 1st October, 1842, from whom, and on what account, viz:		
1842.			
March 3	Thomas Williamson, for overpayment of pension -	$115 00	
3	Stephen Champlin, do do -	46 00	
3	John A. Dickason, do do -	35 75	
3	Thomas Ryley, do do -	78 75	
May 15	John Downes, do do -	95 40	
Sept. 20	William M. Caldwell, do do -	91 25	
			462 15
	Appropriation, per act 3d March, 1843, viz:		
	For pay of invalids - - - - -	40,000 00	
	For widows' pensions, under act 30th June 1834 -	6,000 00	
	For claims of widows and orphans, under act 3d March, 1837 - - - - -	16,000 00	
			62,000 00
	Total - - - - - - - -		102,285 52
	III. Expenditures on account of the fund, per settlements made from the 1st October, 1842, to the 1st October, 1843, viz:		
Oct. 25	President Commercial Bank, Cincinnati, for payment of pensions		36 00
25	William C. Anderson, St. Louis, Missouri, do do -		150 00
25	President Louisville Savings Institution, do do -		519 00
Nov. 16	Thomas Hayes, Philadelphia, do do -		5,041 86
Dec. 12	Jacob Alrichs, Newcastle, Delaware, do do -		144 00
12	President Arcade Bank, Providence, R. Island, do do -		1,230 00
27	George Loyall, Norfolk, Virginia, do do -		4,359 00
31	Robert C. Wetmore, New York, do do -		11,544 89
1843.			
Jan. 9	Frances A. Cooper, (formerly F. A. Davis,) for pension due her -		45 33
21	President Exchange Bank, Pittsburg, for payment of pensions		36 00
21	William Mackay, Savannah, do do -		150 00
21	Thomas Hayes, Philadelphia, do do -		200 10

STATEMENT—Continued.

Dates.	Names and residence of agents, &c.	Amounts.
1843.		
Jan. 23	Timothy Upham, Portsmouth, N. Hampshire, for payments to pensioners	$941 20
24	President Farmers and Mechanics' Bank, Hartford, do do -	1,263 00
24	President Maine Bank, Portland, do do -	1,578 10
Feb. 2	President Louisville Savings Institution, Kentucky, do do -	494 33
2	George Loyall, Norfolk, do do -	1,617 00
2	R. C. Wetmore, New York, do do -	3,342 66
2	J. Vincent Browne, Boston, do do -	6,238 24
15	President Trenton Bank, New Jersey, do do -	450 00
15	Thomas G. Morgan, New Orleans, do do -	618 00
Mar. 6	Obadiah Johnson, for pension due him - - - - -	159 17
31	William B. Scott, Washington, for payments to pensioners	9,913 54
April 14	President Exchange Bank, Pittsburg, do do -	108 00
14	B. D. Heriot, Charleston, South Carolina, do do -	1,318 33
14	Thomas Hayes, Philadelphia, do do -	2,419 50
May 9	George Loyall, Norfolk, Virginia, do do -	1,989 13
12	President Farmers and Mechanics' Bank, Hartford, do do -	511 00
June 12	Jacob Alrichs, Newcastle, Delaware, do do -	64 00
12	President Louisville Savings Institution, Kentucky, do do -	259 00
12	President Arcade Bank, Providence, Rhode Island, do do -	971 50
12	President Maine Bank, Portland, do do -	690 20
17	R. C. Wetmore, New York, do do -	4,974 28
July 13	Timothy, Upham, Portsmouth, New Hampshire, do do -	509 70
13	William Mackay, Savannah, do do -	50 00
13	Thomas Hayes, Philadelphia, do do -	300 83
18	R. C. Wetmore, New York, do do -	793 33
21	Samuel McClellan, Baltimore, do do -	2,467 17
21	President Commercial Bank, Cincinnati, do do -	72 00
21	President Exchange Bank, Pittsburg, do do -	90 00
Aug. 4	George Loyall, Norfolk, do do -	225 08
11	President Trenton Bank, New Jersey, do do -	150 00
	Total - - - - - - - -	68,034 47
	IV. Balances due by pension agents, per last settlement of their accounts, and including advances to the 1st October, 1813, viz:	
1843.	Jacob Alrichs, Newcastle, Delaware - - - - - -	$24 00
	William C. Anderson, St. Louis, Missouri - - - - -	256 00
	J. Vincent Browne, Boston - - - - - - -	8,827 78
	Thomas Hayes, Philadelphia - - - - - - -	3,666 13
	B. D. Heriot, Charleston, South Carolina - - - - -	1,453 67
	George Loyall, Norfolk - - - - - - -	935 36
	Samuel McClellan, Baltimore - - - - - -	2,276 04
	Thomas G. Morgan, New Orleans - - - - - -	1,692 75
	William B. Scott, Washington, District of Columbia - - -	11,962 74
	R. C. Wetmore, New York - - - - - - -	6,561 09
	Timothy Upham, Portsmouth, New Hampshire - - -	714 60
	President Farmers and Mechanics' Bank, Hartford, Connecticut -	607 00
	President Louisville Savings Institution, Kentucky - - -	433 67
	President Maine Bank, Portland - - - - - -	813 00
	President Arcade Bank, Providence, Rhode Island - - -	707 50
	President Exchange Bank, Pittsburg - - - - - -	174 00
	Michael W. Ash, (late agent,) Philadelphia - - - - -	915 95
	Leonard Jarvis, (late agent,) Boston - - - - - -	543 93
	Elias Kane, (late agent,) Washington, District of Columbia - -	1,119 50
	John N. Todd, (late agent,) Boston - - - - - -	91 92
	Total - - - - - - - -	43,776 63
	V. Balance in the Treasury, to the credit of the fund, October 1, 1843	$40,171 72

RECAPITULATION.

I. Balance in the Treasury, to the credit of the fund, on the 1st October, 1842 -	$39,823 37
II. Amount received at the Treasury since the 1st October, 1842; refunded $462 15; appropriated by act 3d March, 1843, $62,000 - - - -	62,462 15
Total amount in the Treasury . - - - - - -	102,285 52
III. Expenditures on account of the fund, per settlements from the 1st October, 1842, to the 30th September, 1843, inclusive - - - - - -	68,034 47
IV. Balances due by pension-agents, per last settlement of their accounts, and including advances to the 1st October, 1843 - - - - - -	43,776 63
V. Balance in the Treasury, to the credit of the fund, October 1, 1843 - -	40,171 72
Total amount to the credit of the fund, October 1, 1843 - -	83,948 35

A. O. DAYTON.

TREASURY DEPARTMENT,
Fourth Auditor's Office, Nov. 18, 1843.

No. 12.

List of deaths in the navy, as ascertained at the department, since the 1st of December, 1842.

Name and rank.	Date.	Place.
CAPTAINS.		
Isaac Hull - - -	Feb. 13, 1843	Philadelphia.
Samuel Woodhouse -	July 16, 1843	Chester county, Pennsylvania.
COMMANDERS.		
William Boerum - -	Nov. 2, 1842	Drowned at the mouth of Lorango river.
Edward S. Johnson -	June 23, 1843	Newport, Rhode Island.
A. J. Dallas - -	July 12, 1843	Troy, New York.
Alexander B. Pinkham -	July 23, 1843	Portsmouth, Virginia.
LIEUTENANTS.		
A. E. Downes - -	March, 1843	Lost in the Grampus.
John B. Cutting - -	May 20, 1843	At Rio de Janeiro, on board the frigate Columbia.
Alberto Griffith - -	Dec. 20, 1842	Kingston, Jamaica.
George M. McCreery -	March, 1843	Lost in the Grampus.
William S. Swann -	March, 1843	Lost in the Grampus.
Levin Handy - -	Sept., 1842	On board the Constellation, East Indies.
George J. Wyche - -	Oct. 25, 1843	At Boston.

LIST—Continued.

Name and rank.	Date.	Place.
Hunn Gansevoort - -	March, 1843	Lost in the Grampus.
ASSISTANT SURGEONS.		
Richard W. Leecock -	Mar. 31, 1843	On board the Somers, New York.
Edwin H. Conway -	March, 1843	Lost in the Grampus.
Nathan H. T. Moore -	April 25, 1843	Baltimore.
PURSERS.		
Benjamin F. Hart - -	Nov. 2, 1842	Drowned at the mouth of Lorango river.
James S. Thatcher -	March, 1843	Lost in the Grampus.
Frederick Stevens - -	July 14, 1843	Nassau, New Providence, attached to the brig Boxer.
PASSED MIDSHIPMEN.		
Isaac S. K. You - -	March, 1843	Lost in the Grampus.
John Brooks - -	June 4, 1843	Boston.
MIDSHIPMEN		
William B. Brown -	Aug. 11, 1843	Gloucester county, Virginia.
Edward N. Beadel -	March, 1843	Lost in the Grampus.
Andrew J. Lewis - -	March, 1843	Lost in the Grampus.
James B. McCarthy -	Aug. 11, 1842	At sea.
George A. Minshall -	March, 1843	Lost in the Grampus.
MASTERS.		
Francis H. Ellison -	May 18, 1843	Navy yard, New York.
Nahum Warren - -	June 10, 1843	Navy yard, Pensacola.
James Tewksbury -	Sept. 1, 1843	Philadelphia.
BOATSWAIN.		
John Smith - -	Oct. 7, 1843	Brooklyn, New York.
CARPENTERS.		
Alonzo Jones - -	Jan. 18, 1843	Boston.
Samuel White - -	Aug, 20, 1843	On board the store ship Lexington, at sea.
Levi Pease - -	May 12, 1842	New York.
James Leckie - -	Nov. 12, 1842	On board the Vandalia, at sea.
NAVAL STOREKEEPER.		
Cary Selden - -	May 26, 1843	Washington city.

No. 13.

List of resignations in the navy since the 1st of December, 1842.

Name and rank.	Date of acceptance.
LIEUTENANT.	
James T. Homans - - -	May 15, 1843.
PASSED ASSISTANT SURGEONS.	
George W. Peete - - -	May 29, 1843.
Charles William Tait - -	November 17, 1843.
ASSISTANT SURGEONS.	
John A. Guion - - -	January 30, 1843.
William G. G. Willson - -	September 9, 1843.
PURSER.	
Thomas Gadsden - - -	March 31, 1843.
CHAPLAIN.	
Samuel T. Gillet - - -	January 19, 1843.
PASSED MIDSHIPMAN.	
William S. Ringgold - - -	April 25, 1843.
MIDSHIPMEN.	
William T. Burwell - - -	May 20, 1843.
Gaspard Du Buys - - -	April 6, 1843.
Walter P. Harrison - - -	June 10, 1843.
Joseph B. Kinkead - - -	August 26, 1843.
E. Randolph Neilson - -	October 11, 1843.
Henry G. C. Shaw - - -	May 18, 1843.
Benjamin F. Van Hook - -	June 15, 1843.
PROFESSOR OF MATHEMATICS.	
Joel Grant - - - -	October 2, 1843.
BOATSWAINS.	
William C. Clark - - -	February 18, 1843.
Edward Lyons - - -	August 30, 1843.
Amos Colson - - -	February 23, 1843.
GUNNERS.	
Henry Welton - - -	February 23, 1843.
James C. Davis - - -	February 11, 1843.
Paul W. Richardson - - -	August 26, 1843.
SAILMAKERS.	
James P. Wood - - -	April 28, 1843.
Charles Frost - - -	February 10, 1843.
MARINE CORPS.	
SECOND LIEUTENANT.	
John J. Berret - - -	April 4, 1843.

No. 14.

List of dismissions from the navy since the 1st of December, 1842.

Name and rank.	Date of dismission.
LIEUTENANTS.	
Edward M. Vail - - -	July 23, 1843.
Addison R. Taliaferro - -	October 18, 1843, (cashiered.)
MIDSHIPMEN.	
McKenzie Beverly - - -	Stricken from the list, March 17, 1843.
Samuel A. Miller - - -	June 30, 1843.
PROFESSOR OF MATHEMATICS.	
James Major - - -	October 27, 1843.
BOATSWAIN.	
Ezra Chamberlain - - -	January 26, 1843.
NAVAL STOREKEEPERS.	
R. C. Yates - - - -	April 13, 1843.
Paul R. George - - -	July 18, 1843.
Paul Willard - - - -	July 25, 1843.

No. 15.

United States Steamer Union,
Anchorage near Washington, February 20, 1843.

Sir: I have the honor to report to you the arrival at this place of the U. S. steamer Union, under my command.

Time under way from the Norfolk navy yard to her present position twenty-nine hours, during which time she towed a heavy ladened schooner for fifteen miles, and steamed under half a head of steam for more than eight hours, besides an absolute loss of five hours' time in passing through forty miles of ice.

The alterations you were pleased to authorize in her propellers, spars, and sails, have been completed. The alteration of the former consisted in a reduction of the surface of each paddle, which has increased the vessel's speed two miles per hour. The change made in the latter, viz: the augmentation of spars and sails, has been so arranged as to render the vessel more efficient, under canvass *alone*, and has in no wise taken from her efficiency under steam *alone*—which has been proven on her trip hither, by using her steam power without the sails, and by using her sails without the steam power, as well as by the use at the same time of both steam power and canvass. Her velocity by steam power, uninfluenced by wind or tide, is ten miles per hour; and it has been determined by her time under way between places whose distance has been established by measurement, viz: Norfolk and Fort Monroe, (on Old Point Comfort,) known to be fifteen miles apart, a distance the following extract from the log of this vessel will show that she has steamed, uninfluenced by wind or tide, in one hour and thirty minutes precisely.

Extract from the log.

"From 4 to 8 a light breeze from the southward and westward, and clear weather. At 5h. 45m., fired up. At 7h. 5m., A. M., abreast of Town point, Norfolk, and standing down the river on the last of the ebb; 8h. 35m., between Fort Calhoun and Fort Monroe, having made the distance, estimated at fifteen miles, in one hour and thirty minutes precisely; weather calm and sea smooth. 'Slack water' when passing Town point.

"H. H. BELL."

I would respectfully express the hope that you may be pleased to notice, under your own eye, the result in operation of the plan of a steamer exhibited in this vessel, which has so grown under your patronage and support as to present the proof of self-evident success. An increase of speed may yet be obtained by a further reduction of the paddle.

I have the honor to be, with great respect, your obedient servant,

WILLIAM W. HUNTER,
Lieutenant commanding.

Hon. A. P. Upshur,
Secretary of the Navy.

I have carefully noticed the operation of the steamer Union, on my passage in her from Norfolk to this place, during which, under steam alone, without the aid of sails or tide, she was impelled ten miles per hour; under canvass alone, she is quite as efficient as a sailing vessel. Her performance, in every respect, authorizes the expression of my opinion that the plan upon which she is propelled, her construction and arrangements, are triumphantly successful.

FRANCIS GRICE,
U. S. Naval Constructor.

United States Steamer Union,
Naval Anchorage, off Norfolk, Va., April 23; 1843.

Sir: I have the honor to report to you that this vessel, in obedience to your order, left Washington yesterday at sunrise, and steamed against a strong wind and tide directly ahead, the entire distance, excepting four miles, when I caused sail to be made, and hauled on a wind, for the purpose of trying her sailing qualities with one of the fastest pilot boats out of Hampton.

I have the satisfaction to state that the Union, under canvass, close hauled on a wind, beat the pilot boat one mile in four; and, although she is now light, I find her the stiffest, and, I think, the fastest and most weatherly vessel I have ever sailed in.

I have the honor to be, with great respect, your obedient servant,

WILLIAM W. HUNTER,
Lieutenant commanding.

Hon. A. P. Upshur,
Secretary of the Navy.

UNITED STATES STEAMER UNION,
Boston Harbor, May 20, 1843.

SIR : I have the honor to report to you that, in obedience to orders from the honorable Navy Department, the U. S. steamer Union, under my command, left Cape Henry at noon on the 16th instant, and is now anchored in this harbor, having anchored last night at Holmes's Hole. This morning we resumed our course for Boston, under steam, and when clear of Nantucket shoals made sail. In passing Cape Cod, the vessel run under canvass, with low steam, twelve and a half miles per hour. Steam power has been used during the entire passage, a great part of which has been performed against a strong adverse wind and head sea, directly against which she has made seven miles an hour. Unaided by wind, under steam alone, she has performed nine and a half miles an hour.

I have the satisfaction to report to you that this vessel, under canvass, is fast, weatherly, buoyant, stiff, and dry, and that her performance as a sea steamer has fully confirmed my belief of the peculiar fitness of vessels on this plan for the naval service and merchant marine. Her consumption of fuel has not been over twelve tons for each twenty-four hours' continuous steaming.

So soon as the object expressed in my sailing orders shall be accomplished in this port, I will proceed southwardly along the coast, touching first at New York, &c.

I have the honor to be, with great respect, your obedient servant,

WILLIAM W. HUNTER,
Lieutenant commanding.

A. THOMAS SMITH, Esq.,
Acting Secretary of the Navy.

Extract from the log book of the U. S. steamer Union of May 15, 1843, *exhibiting her performance from Norfolk to Hunger, under the eye of the Hon. Abel P. Upshur, Secretary of the Navy, then on board.*

"At 8h. 45m., A. M., got under way, the jack at the main. At meridian, standing up the Chesapeake bay for the residence of Mr. Upshur, under steam and sail. Fired off three loaded shells in the presence of the Secretary of the Navy, to try their fuses and their gauges; wind light from the southward and eastward, and pleasant. At 1h. 30m., P. M., took in all sail, and at 1h. 45m. anchored to the southward of Hunger creek, Eastern Shore of Virginia, about one and a half mile from the shore, in three and a half fathoms water. Furled sails. From the necessity to keep the channel around the Horseshoe shoal, made the distance run from Norfolk sixty-two miles, against a strong flood tide, giving an average speed, under sail and steam, aided by a moderate breeze, of twelve and a half miles per hour."

Very respectfully, your obedient servant,

WILLIAM W. HUNTER.

United States Steamer Union,
Philadelphia, June 10, 1843.

Sir: I have the honor to report to you that the United States steamer Union, under my command, left the harbor of New York, near noon, on the 8th instant, and is now (meridian) anchored off the navy yard at this place. Deeming it important to ascertain the extent of steam power available in this vessel by the use of anthracite coal alone, I left the anchorage at New York with a fresh wind directly adverse to our course to the Delaware bay, and it continued so, with a head sea, to that place. I found it impossible to keep up more than half a proper working pressure of steam with anthracite alone. In further compliance with orders from the honorable Navy Department, steam power was dispensed with, and the vessel tried under canvass alone, close hauled, to ascertain her stability with but twenty tons of coal on board; and I have the satisfaction to inform you that she is sufficiently stiff to bear a press of canvass with empty coal bunkers. The experiments alluded to caused a diminution of speed under steam and a deviation from her course under canvass; but they were necessary to enable me, in compliance with my instructions, to make to you a full report of the performance of this vessel, which I will be enabled to do on our arrival at Norfolk, Virginia, for which place I purpose sailing so soon as the object of your orders to me shall be accomplished at this place.

I have the honor to be, very respectfully, your obedient servant,
WILLIAM W. HUNTER,
Lieutenant commanding.

A. T. Smith, Esq.,
Acting Secretary of the Navy.

United States Steamer Union,
Norfolk, June 24, 1843.

Sir: I have the honor to announce to you my arrival at this anchorage, and the satisfaction to inform you that the performance of this vessel under steam or canvass is highly satisfactory, and that the important modifications introduced into her form and construction are justified by the results.

Since my departure from the Chesapeake, I have derived much valuable information from the experiments I have made.

I shall avail myself of the earliest opportunity to confer with you more at length on this subject.

I have the honor to be, very respectfully, your obedient servant,
WILLIAM W. HUNTER,
Lieutenant commanding.

Hon. Abel P. Upshur,
Secretary of the Navy.

United States Steamer Union,
Norfolk, June 24, 1843.

Sir: I have the honor to report to you that this vessel was got under way on the forenoon of the 21st instant, from the anchorage off the navy yard, Philadelphia, and after proceeding up and down the Delaware river abreast of that city, steamed down the river to sea, from Newcastle to Cape Henlopen, against a strong head swell and wind; passed Cape Henlopen at 7, A. M., on the 22d, wind ahead; blew off the steam, and made sail on a wind, beating to the southward along the coast, for the purpose of obeying more fully your instructions, requiring me to report the sailing qualities of this vessel under all circumstances. I have the satisfaction to report to you that in a light breeze, and also in a fresh breeze, she has been tacked without starting a sheet. We beat nearly the whole distance from Cape Henlopen to Cape Henry against light winds directly adverse to our course, and passed Cape Henry at 8, A. M., on the 24th, and arrived at this anchorage at 4, P. M.

In my former reports, and under your own eye, you have been made acquainted with the practical proofs of the fitness of vessels on this plan for naval purposes. In the assurance that the principle of propulsion, model, rig, arrangement of battery, &c., as exhibited in this vessel, is fully established by practice, and is perfectly adapted to the end I have desired to effect, viz: the efficient application of canvass and steam power to our national vessels, and each moving power itself effective without hinderance to the other, I would respectfully state to you that the experience consequent upon the performance of this vessel at sea will enable me, by a more perfect mechanical arrangement, not only to obtain in the construction of other vessels on this plan a much higher rate of speed, but also to amend the trifling defect necessarily attendant on an experiment so novel, and will much advance the efficiency of this vessel, the boilers of which are found not suitably adapted to the sea, from the smallness of their flues, and want of capacity in their fire and steam room. Yet, notwithstanding this defect, by which one-third the power of the machine has not been available, the success of the experiment under this great disadvantage induces me very respectfully to ask that you will authorize the application of more suitable boilers to this vessel. Those now on board will be found well adapted to the use of wood as fuel, and fresh water on shore; and as they are admirably constructed for strength, and of the best material, they would be found well adapted to replace those now at the dry-dock engine at Norfolk, the boilers of which it will be found necessary to replace at no distant day, and their little consumption of fuel compared with those now used at the dry-dock engine at Norfolk will in fact conduce to economy. In this suggestion I am entirely supported by the advice of Mr. William P. Williamson, chief engineer of this vessel, who has for several years been the engineer in charge of the engine at the dry dock, Norfolk, Virginia.

In a few days I hope to have the honor personally to express to you, more in detail, my reasons for the suggestions herein submitted.

Consumption of anthracite coal for each 24 hours' steaming, 10 tons; and when bituminous coals are used, 12½ tons are consumed in 24 hours.

I have the honor to be, very respectfully, your obedient servant,

WILLIAM W. HUNTER,
Lieutenant commanding.

Hon. A. P. Upshur,
Secretary of the Navy.

Navy Department, *July* 7, 1843.

Sir: Your letter of the 1st July is received, and I take great pleasure in complying with the request it contains.

I have watched with very great interest the progress of the steamer Union, from my first entrance on the duties of the Navy Department to her late cruise. I have long been convinced that the application, in the ordinary mode, of steam power to vessels of war, would not answer any very useful purpose, and that the maritime nations of the world would find it necessary to abandon such vessels, except as the mere auxiliaries of fleets.

These two propositions appear to me to be unquestionable:

First. That *cruising* by steam power is too expensive, and subject to too many difficulties to be generally adopted.

Second. That a vessel of war, propelled by steam alone, or by steam as her principal moving power, must have her machinery and her paddle wheels below water mark.

Hence no steamer can be regarded as suited, in all respects, to purposes of war, unless she can cruise under canvass, nor unless her machinery and paddle wheels are out of the reach of an enemy's shot. To attain these objects, and at the same time to combine with them the other properties of a vessel of war, has been the great desideratum; and it has hitherto baffled the skill of all maritime nations of the world.

How far you have been successful in overcoming these difficulties, seems to be fully decided in the public judgment. In that judgment I concur. I have minutely examined the structure and arrangements of the Union, and have had an opportunity to form a correct opinion of her properties as a sailing and steaming vessel. Of all these, I feel authorized to speak in terms of high approbation.

The internal arrangements of the Union are as good as they can possibly be, in any arrangement of the same space. Indeed, I have been surprised to see how much she can stow, while at the same time she affords the best accommodations to her officers and crew. This is a great advantage in a cruising vessel, and I think that you have attained it in a much greater degree than is usual in vessels of the same class.

The *rig* of the Union is unexceptionable, simple, cheap, light, easily managed, safe, and readily replaced. I do not see in what respect it can be improved.

The *battery* is so contrived as to render it effective in every direction. Hence her guns are almost as effective, in a contest with a single ship, as twice the number would be, mounted in the ordinary way.

A great number of arrangements less conspicuous, but yet contributing much to convenience and facility in the various departments of duty, have been pointed out to me; and, as far as I can judge, are highly useful improvements.

I took passage in the Union from Norfolk to my own house, because it delayed the vessel but little in her destined cruise, because it was desired by you that I should do so, and because I considered it important that I should form, from personal observation, some idea of her powers, both under steam and under sail. The wind being fair, and sufficiently fresh, she made but little use of her steam; and, therefore, on that point, I cannot speak with confidence from personal observation. But I rely, without doubt, on the reports of her performances at sea, which have heretofore been published. I will mention only the remarkable smoothness of her motion, there being no jar, no noise, and none of the other usual effects of the action of steam engines, except a slight tremulous motion, occasionally yet not frequently felt.

As a sailing vessel, I consider the Union *much the best that I ever saw.* Whilst her motion is as gentle as it can be, scarcely disturbing the water in her progress, her speed is extraordinary, and her capability to bear sail unusually great; whether or not she will do well in a heavy sea, I have had no means of ascertaining, but I have no reason to doubt that she will. And, if it should be so, I do not perceive that any considerable improvement can be made, either in her model or her rig.

In conclusion, sir, I think you have achieved a great and useful thing. You have presented to your country a vessel of war, combining all the best properties of two classes of cruising vessels; a sailing vessel possessing all the benefits of steam power, without any of its disadvantages. Considering that this is a first experiment, your success has been wonderful. I have no reason to doubt that the skill and knowledge which you possess, directed by your zeal and enthusiasm in this cause, will enable you, in future trials, to introduce all the improvements of which your general plan is susceptible. Yet, even if no improvements should be made, the vessel, as she now is, establishes a new era in the application of steam to navigation.

Your country, in my opinion, owes you a large debt of gratitude and confidence; and I trust that it will be paid in a becoming spirit, not merely of justice, but of liberality.

I am, respectfully, your obedient servant,

A. P. UPSHUR.

Lieut. William W. Hunter,
United States Navy, Washington.

Washington City, *August* 29, 1843.

Sir: By your direction, I have the honor to submit the working model and draughts for the small iron steamers on my plan, which you propose to append to the African and Pacific squadrons, and one of yet smaller dimensions, designed for the protection of the Government live oak; together with my reasons for using iron instead of wood in their construction, and for applying to them the auxiliary propulsive power of steam.

An iron vessel has the following advantages over a wooden one of the same dimensions, viz:

1st. Greater strength.

2d. Less weight, and consequently she may be propelled faster by the some power, whether wind or steam.

3d. She has more room inside for her crew and provisions.

4th. She cannot be burned.

5th. She will last forever, and cost scarcely any thing for repairs. This comparative indestructibility keeps her ever ready for sea, and exempts her from the great expense attendant upon the preservation of wooden vessels in ordinary, and the loss of time consumed in fitting the latter for sea.

6th. Her bulkheads being water tight, she may not be sunk, though one part of the vessel be pierced by shot.

7th. A Paixhan shell cannot lodge in her side.

8th. She has none of the vegetable matter of wooden vessels about her, which produces disease by decomposition.

9th. The utmost cleanliness of the berth deck is indispensably necessary to the health of the crew. Hers, being iron, may be washed at all times; not so the wooden-decked vessels, where the dampness arising from the absorption in washing them is so great, that the medical officers attribute to it chiefly the size of their sick lists.

10th. The vessel, being of iron, is ever tight, and costs nothing for caulking, except on her spar deck, which should be of wood.

11th. She is free from vermin, so destructive to provisions and stores in the wooden vessel.

12th. She will make a great saving in the article of paint—the iron surface being simply covered with it, whilst the wooden one is saturated.

The model and draughts submitted present to your view a fast-sailing and efficient vessel, as capable of cruising and performing all and every evolution under her canvass alone as any other vessel may do without the aid of steam power, with a deck, too, as clear and unencumbered, for a battery or other purposes. She has, therefore, all the advantages of, and can be sailed at less cost than an ordinary cruiser of her size or class. This is proven by the performances of the steamer Union at sea, where she has exhibited, practically, her efficiency under canvass and steam, separately; each moving power being independent of the other. I have the honor, very respectfully, to submit to you, herewith, a demonstration of the problem exhibited in her model. (The demonstration is hereunto appended.)

The auxiliary propulsive power of steam may thus be applied without detriment to the cheapest and most essential moving power, the wind. The advantages of this application to vessels designed for the services stated in the premises are these:

On the coast of Africa, to facilitate with certainty and celerity the navigation of rivers against currents and adverse winds, to be able to move more rapidly in calms and against the wind than the light vessels selected for the slave trade, which are always amply provided with "sweeps," and are therefore often accessible only in boats—a manner of attack very disadvantageous; besides these, is the great saving in health to the crews by shielding them from fatal exposure to heat and rain, an excess of both of which is common to the cruising ground on that coast.

The vessel designed for service in the Pacific will proceed to the straits of Magellan, under canvass; steam through these, and run to Valparaiso, Lima, and Panama, before a trade wind. A return to either of these ports without the aid of steam can be effected only by a long and tedious beat, dead to windward, against the trades; whereas she, by the aid of her steam, may be the medium of a rapid and certain communication between these points, subject to our naval laws. The Government is thus put in direct and speedy communication with its forces in the Pacific by the way of Panama; a secure and rapid means for the transmission of intelligence is established, so important to the vast commercial interests of our citizens trading in those seas; as also a safe means for the transportation of their funds—and thus will be removed an obstruction to our commercial, and consequently our national interests, which has ever been sensibly felt in that quarter. The coal mines on the sea coast of Chili will abundantly supply her fuel, and on her voyage to Panama under canvass she will carry the coal to bring her back to Lima under steam. As the vessel designed for this service is small, and will use fuel only on her return passages from Panama, its cost will be trifling, and I doubt not that if she be used as a mail packet, the receipts to the Government from that service will fully defray all cost, and will certainly, in one year's service, far exceed the entire first cost of the vessel and all her expenses, if to those be added the usual percentage upon the transportation of specie and bullion. The vessel's armament should consist of but *one* heavy eight-inch gun, on a pivot. She would then be an efficient cruiser, with steam power at hand, but not to be used without a necessity for its application, which should be shown upon the log book.

The little vessel designed to guard the live oak should be smaller, of lighter draught of water, and mount one long eighteen pounder chambered pivot gun. She should be fast under canvass, with steam power to move briskly against the wind, and tow to the place of adjudication any vessel found depredating on the live oak lands. Her steam power, too, should never be used without a necessity for it, and this should be made to appear on the log. Her construction is such as will render the action of her machinery and propellers noiseless, thus fitting her for the service of surprise. Her furnaces should be adapted to the consumption of wood as well as coal, that she may be enabled, if necessary, to supply her own fuel, and to use the mangrove wood found in great abundance in all parts of her station, the smoke from which is scarcely perceptible, even in daylight—a fact I reported to the Department several years since, based upon my actual use of that fuel whilst in command of a steamer acting against the Indians in Florida.

Her cruising ground is on a coast where a large amount of property is wrecked every year. She can be made very useful in preserving this, and rescuing human life from the risks consequent upon these wrecks; and if, at any future time, her services should be required as a packet, despatch, or gun boat, as a lookout, signal, surprise, or freight vessel, for the transportation of anchors, chain cables, shot, shells, stores, water tanks, or seamen, from depot to depot, she will be found fully adapted to them.

The three vessels above described can be completed entire for $50,000 each; the sum required for the three being $150,000.

I have the honor to be, with great respect, your obedient servant,

WILLIAM W. HUNTER,
Lieutenant, United States Navy.

Hon. David Henshaw,
Secretary of the Navy.

Upon the construction of marine steamers.

Before proceeding to the consideration of this subject, it is necessary to admit the truth of the two following propositions, namely:

That every floating body displaces a quantity or weight of water equal to its entire weight.

That the power required to impel bodies of the same form through water is in accordance with their greatest immersed cross-section.

The position of the propeller in the vessel we shall now treat of is within the greatest cross-section; therefore, as we *increase the resistance* of this cross-section by increased submersion, we at the same time find a denser medium, which *increases, by its greater resistance,* the efficiency of the propeller.

To enable us to carry the cross-section through the water with the great est facility, we avail ourselves, in the construction of the vessel, of the mechanical power of the wedge; and to this end the extremities of the vessel are as far removed from the cross-section as is consistent with a due proportion of the breadth of the vessel to the length; for the further they are removed, the wedge becomes more acute, and a greater power is obtained to accomplish the end desired; for the after end of the vessel is operated upon by the reaction of the fluid that has been divided or pushed aside by the wedge form of the forward section, which reaction is equal to the gravity of the water, plus the atmospheric pressure. And since *all* fluids, in motion, exert their force at right angles to the plane of resistance, it *must be* apparent that, in the after section, we possess a form by which the gravity of the water displaced by the cross-section is converted into an impelling power; but, although the form described represents two wedges abutting upon each other at the greatest cross-section, it must not be understood that an angular point is there presented; for the propeller *there placed*, as already stated, gives, from the length of its diameter, a graceful curve to the sides of the vessel.

The *right lines* of entrance and clearance being the shortest distances between the greatest cross-section of the vessel and the extremities, *the fewest possible* particles of water are to be severed by the vessel's progress.

We have now described the form offering least resistance for its area; but, in the construction of a vessel for marine navigation, there are qualities to be considered beside those which offer the greatest facility of propulsion.

The quality we shall next consider, from its importance, is buoyancy.

The *right lines* forming the sides of the vessel described cause her floor to be a *right line* of her entire length, and does not admit in her what is technically called "dead wood;" or, to be more distinct, there is space where would be otherwise a mass of timber, and this space gives buoyancy. Water is incompressible for practical purposes, and resists pressure, in accordance with the pressure to which it is subjected; therefore, it will be admitted that the water at the bottom of the vessel sustains the pressure of the superincumbent mass of water, plus the pressure of the atmosphere; hence, the power exerted upon every square foot at the bottom of the vessel, to sustain her, is equal to the pressure of a column of water in height from the bottom of the vessel to the surface, plus the atmospheric pressure.

We believe we have already demonstrated that the form of the vessel described possesses sufficient stability for the use of steam power alone; but for marine navigation, for the sake of economy in long passages, it is advisable to avail ourselves of the winds. Steam exerts its force on a direct course; the wind admits of gaining the same end, while it exerts a lateral pressure. Now, to adapt the form of the vessel to the use of the last-named impelling power, we will treat of that portion of the hull which is subjected to immersion by its use.

The centre of effort of the canvass is thrown so far above the centre of gravity as to use the leverage of the masts to that extent to immerse the lee side. To oppose this effort, the vessel must be made to possess what is technically called "stability," or capacity to resist lateral pressure—a quality which we will now attempt to define.

A sphere is destitute of stability; a grain of sand is sufficient to invert it. Elongate the sphere, and as its poles are removed from its centre, so will the form thus produced possess stability; i. e., flatten out the upper and elongate the lower hemisphere, until the summit of the sphere is lowered to that point nearest the centres of motion and gravity, and we have a form possessing stability to the utmost extent of its area.

The form of the vessel, as we have described it, already presents its sides, below the surface, nearly perpendicular; but from the surface upward the sides should present a convex curve, which increases the breadth or beam at every remove from the surface. This portion of the hull can only be immersed by lateral pressure, and the form we have given it will *furnish* an increased stability or resistance to lateral pressure, as the demand for stability is increased.

Depth of keel is used to resist lateral pressure of canvass: *the perpendicular* sides of the vessel we have described accomplish all that is derived from the keel, and confer the advantage of navigating, with heavy ships, waters accessible only to a light draught.

We have now given the theory, and described it as practically exhibited in a vessel constructed upon the foregoing demonstration, combining all the advantages of a steam and sailing vessel, with a capability of using either power independently and efficiently.

In thus presenting a vessel offering some advantages over those heretofore employed, it cannot create surprise that we have availed ourself of a form materially differing from that with which the eye has long been familiar, and to be propelled by means offering advantages, in point of efficiency, comfort, and security, such as we think we shall be able clearly to show.

I have the honor to be, very respectfully, your obedient servant,

WILLIAM W. HUNTER,
Lieutenant U. S. Navy.

Hon. DAVID HENSHAW,
Secretary of the Navy.

WASHINGTON CITY, *November* 29, 1843.

SIR: I would respectfully request to append to my report of the 24th June, 1843, this notice of some of the advantages peculiar to sea steamers constructed on my plan, which have not heretofore been brought to the consideration of the department.

1st. Their peculiar model, which, while it gives the greatest capacity and buoyancy, carries with it the lightest draught of water, and thus renders all our Southern harbors available for the largest class of vessels of this construction; enables them to be run boldly, without the apprehension of grounding; and even in this event they can receive no injury to their propellers.

2d. From the drift wood in our Southern and the ice in our Northern rivers and lakes, so destructive to the propellers of steamers, these propellers are entirely protected, being horizontal in their action, far below the surface, and throwing *from* them, by centrifugal force, a rapid current of water.

3d. The horizontal action of the propellers, as just stated, and their separate and distinct action, render the use of the rudder unnecessary to steer the vessel under steam, because she may be steered by the propellers without the rudder, as has been often proven. She can thus turn on a *pivot*, or the *centre* of a circle, and may then give or avoid a raking fire at will; whilst all other vessels are dependent upon their rudder to turn, and must then move on the *arc* of a circle. The loss, then, of the rudder in all other vessels destroys their ability to manœuvre, whilst these vessels are not exposed to the risk of injury in this most vulnerable point.

It is proper in this place to call your attention to an important part of my plan for war steamers, which has not as yet been embraced in the construction of any, which, by means of a shield deck, renders it impossible to sink them by means of an enemy's shot, notwithstanding every shot may pass through the sides of the vessel. This is so self-evident that it will not admit of doubt. The diagram and demonstration (appended hereunto) will explain it.

In conclusion, sir, it may not be out of place here to fix your attention to some of the facts connected with the development of this American improvement in the art of constructing, rigging, equipping, arming, and propelling vessels, as shown in the steamer Union, the first experiment of any magnitude made with it.

In the construction of the Union, the chief effort was to develop the plan, and furnish the Government a strong, cheap, and useful vessel. What degree of success attended the effort, you can determine. Her frame is of heavy oak timber, sided fourteen inches, solid and caulked for eighty feet, in her midship sections, on the bottom and sides, up to her berth deck. She is planked to the water line with heavy six-inch oak plank, and ceiled with four-inch oak and pine, and caulked to the berth deck. Every plank may be torn from her sides and bottom, and cause no leak to the vessel. She is copper-fastened more heavily than usual, is of 1,040 tons, and cost, equipped and armed ready for sea, by the official returns already presented to you, $113,909 94¼. The force that has hitherto been effective to propel her, at a consumption of twelve and a half tons of bituminous coal in twenty-four hours, has been, in consequence of her defective boilers, one-third less than it will be, when her new boilers of 270 horse power are completed and in operation. This will still be a power far inferior to that employed for ocean steamers of the same tonnage. Official evidence has already been furnished you, by disinterested persons, that her rate of steaming with her first and defective boilers was ten miles per hour, whilst, as a sailing vessel, she was equal to any other. Thus, then, is established, that for her tonnage and battery this first vessel cost far less than any war steamer hitherto constructed; and from the success which has already attended her, with the experience gained in her construction, the assurance is given that a much higher rate of speed will yet be attained in the future construction of vessels upon the same plan.

DEMONSTRATION.

Let A*A*A be the water line, and BKB be the shield deck of iron, or faced with iron. The abutments of said shield deck are joined, and secured entirely around and within the vessel, at a given distance below the water line, out of the reach of shot. The summit of said shield deck is exactly amidships, and so elevated that a greater space is contained between the shield deck and the water line, above the water line, than between the shield deck and water line, in the wings of the vessel, below the water line. The hatches are amidships in the summit of the shield deck, and are fitted to traverse fore and aft within the shield deck, at CC, with water-

,t slides of iron. The abutments of the shield deck at BB are, by rea- of their distance below the water line, out of the reach of shot; and surface of the shield deck, being of iron, and forming with the direction iny missive discharged against it from cannon afloat an angle of over 5°; and as said angle will cause said missive to glance or be thrown off m said deck, it follows that that part of the vessel contained under the face of said shield deck is secure from the effect of shot. Now, com- re the space contained between that part of the water line, that part of inner surface of the vessel's side, and that part of the surface of the eld deck at HH, to that contained between the part of the water line l part of the surface of the shield deck at KKK, and it is evident that, uld the side be so pierced or torn by shot as to fill the first-named space HH with water, (being all the water that can possibly be admitted,) the oyancy gained by the greater space at KKK, together with the displace- nt contained under the shield deck and water line, and it is manifest it said vessel cannot be made to sink by the means named in the premi- ; and the engines and machinery, being far below the water line, will by said means protected.

Very respectfully, your obedient servant,

WILLIAM W. HUNTER
Lieutenant U. S. Navy.

Hon. DAVID HENSHAW,
Secretary of the Navy.

No. 16.

UNITED STATES SHIP PRINCETON,
Philadelphia, October 21, 1843.

SIR: I have the honor to inform you that I left the Delaware on Tues- ay, the 17th instant, to try the Princeton at sea, and returned to this place ist night to finish her equipment. The Princeton has performed so well, nder all circumstances, that too much cannot be said in praise of her. We rrived at Sandy Hook on Wednesday, in 21¼ hours from Newcastle. Ve went up to the city of New York to show ourselves, and to give notice o the captain of the English steamer Great Western that I designed to iave a trial of speed with that vessel. On Thursday the Great Western ame out of the East river, and the trial took place from the battery to the ea, in which we gained a most glorious triumph, in the presence of many thousands of our fellow-citizens assembled to witness the useful and exciting contest. The following account, which was made at the time by two gentlemen who came on board for that purpose, I prefer to send to you, rather than to trust my own pen on the subject. You will allow me, however, to add, that the Princeton is now admitted to be the fastest and the most beautiful ship afloat, as she will hereafter be admitted to be the most formidable ship afloat.

"At 38 minutes past 2 o'clock, P. M., whilst the Princeton was lying in the North river, the Great Western was seen passing the battery under a full head of steam, blowing off strong, and with her fore and aft sails set, the wind blowing fresh from the westward. The Princeton immediately started her engine, gave chase, and, coming up astern of the Great Western soon passed her with no sails set, and the yards square. The Great Western then set her square sails, and the Princeton, following her example, made sail also, and continued to widen the gap between the two vessels. When the Princeton had arrived at the buoy of the Middle, below the Narrows, she was more than a mile ahead of the Great Western. Here the latter ship, to make good the distance she had lost, took the "swash channel," which is three miles shorter than the ordinary ship channel, which the Princeton had taken before she was aware of the intention of the Great Western. Notwithstanding the greater distance she had passed over, she met the Great Western again at the Black buoy, on the outer bar, and there passed under her stern about two lengths distant; then hauled up on a line parallel to her. When coming alongside, Captain Stockton wished Captain Hosken a pleasant passage, and the crew of the Princeton gave the Great Western three cheers. The Princeton then passed rapidly ahead of the Great Western, in two minutes crossed her bow, and then hauled up for the capes of the Delaware.

"From the time that the Princeton passed Castle Garden till she finally left the Great Western, was one hour and fifty-six minutes, during which time she had beaten her three miles.

"The Princeton occupied one hour and thirty-one minutes in going from Castle Garden to Sandy Hook point, a distance of more than twenty-one miles; thus showing her speed to have been more than fourteen miles per hour, and that against the flood tide, and proving her to be the fastest sea-going steamer in the world.

"The Great Western accomplished the distance to the bar in considerably less time than she had ever done before, having been well prepared for the occasion.

"The Princeton had her full complement of coal in her bunkers, as also the greatest part of her water and stores, and a quantity of coal on deck equal to the weight of her armament."

Your obedient and faithful servant,

R. F. STOCKTON.

Hon. David Henshaw, *Secretary of the Navy.*

No. 17.

Memphis, *May* 4, 1843.

Sir: We have the honor to transmit herewith our report and plan of the survey and examination of the harbor of Memphis, made in obedience to your order of the 25th of March. During the whole of our stay here the Mississippi has been at its highest stage, and the low grounds entirely covered with water. We deem it of great importance, to the end of obtaining more accuracy, and verifying by our own observation the information we have received from others, that we should be allowed the opportunity of revisiting this place at a season when the river will be sufficiently low to expose the entire surface of the bank. This may be the more necessary, as it cannot be known till then what alteration the present flood may make in the size and form of the batture.

Very respectfully, your obedient servants,

L. ROUSSEAU, *Captain.*
H. A. ADAMS, *Commander.*
S. JOHNSTON, *Lieutenant.*

Hon. A. P. Upshur, *Secretary of the Navy.*

Report of survey and examination of the harbor of Memphis, Tennessee, by Captain L. Rousseau, Commander H. A. Adams, and Lieutenant S. Johnston, United States Navy.

MEMPHIS, TENNESSEE, *May* 3, 1843.

SIR: Agreeably to your order of the 25th March, we have made a survey and examination of the harbor of Memphis, and have the honor to furnish the following report, in which all the points of inquiry contained in your instructions are noticed in order.

No. 1. Depth of water at all seasons.

Opposite the site surveyed for a naval depot, the channel of the river runs close to the edge of the bank, and thirty feet water may be found at the lowest stage of the river.

No. 2. Greatest draught of water which can be carried to the Gulf of Mexico at the lowest stage of the river.

Seven feet is the greatest depth that can be relied on during low water, which is usually about three months in the year. The quantity of water beyond that will always depend on the rise in the river. The obstructions at low water are sand banks at different points below this place.

No. 3. Distance of low-water mark from the channel of the river.

The channel of the river runs close to the batture, and vessels of any draught can lie alongside the shore at low water.

No. 4. Practicability of constructing wharves.

Wharves, as they are constructed on the Northern rivers, are not suitable to the banks of the Mississippi, where the difference is so great between high and low water. Floating wharves, on the plan of the wharf boats in general use here, would be much more convenient, and could be built at a trifling expense.

No. 5. Nature of river bank and adjoining soil.

Memphis is situated on a bluff of land, known as the fourth Chickasaw bluff, elevated eighty feet above the river at extreme low water. The soil of this bluff is clay, mixed with sand and loam, and is in most places suitable for making bricks. Between the foot of it and the bed of the river there is in some places a narrow slip of level land, the surface of which is a little above the river at average high water. It is an alluvial deposite, and liable to cave or wash away when the current of the river runs strong against it. It will be seen by the plan of survey that in front of the city, and extending both above and below the site marked for a naval depot, is a bank or batture, formed by the deposite of the river, which at average low water is twenty feet above the river, and at the lowest water known is twenty-eight feet above it, and has at high water from six to twelve feet on it. The channel of Wolf river cuts through it; and it is at the mouth of Wolf river that the only practicable place for the erection of public buildings can be found in the harbor of Memphis. This bank is of recent formation, and is at low water dry and firm. When the building of Memphis was commenced, in 1819, the channel of the river ran close to the bluff bank, and the steamboat landing at low water was then at the mouth of Wolf. In 1820 the river forced for itself a new passage at a place some miles above, which gave a different direction to the channel; an eddy was formed where the main current ran previously, and the deposite commenced, which has made the batture what it now appears. It is stated by respectable citizens of the place that for one or two years past the batture has gained nothing in surface, but that every overflow raises it from six to twenty inches higher. To reclaim the part embraced in the site, it would be necessary to levée the outer edge of it, and drive piles of great length at low water from the termination of the causeway that forms its southern boundary up the river to the mouth of Wolf, and up the south side of Wolf as far as the limits of the yard, and also around the triangle on the north side of Wolf. It could then be filled up by the earth removed in grading the hill above it, and with materials from other parts of the bank, or by the natural deposite of the river, which could be admitted at high water for the purpose. The cost of grading the bluff and raising the entire site above all overflow is estimated at $28,920. The permanency which may be given to works of this sort is shown at New Orleans, where a considerable portion of the city is built upon a similar batture, secured in the above manner. Wolf is a small river about 160 feet wide at its mouth, and having at low water a rapid current, and said to be two hundred miles in length. It would form in high water an admirable harbor for boats, and a good place for landing timber and stores of all kinds. It must be observed, however, that Wolf cannot be entered with boats at a low stage of the river. Thus this place presents, after being levéed and filled up, the advantages of a sufficient front on the river for building; a convenient harbor for boats bringing iron, coal, timber, or provisions; ample space on the low grounds for ropewalks, workshops, and other necessary buildings; and on the bluff sufficient room for officers' quarters and marine barracks. This is the case at present; but the well-known character of the Mississippi is not altered at Memphis. We have stated already that one change in the set of its current has caused the formation of the batture in front of the city. Another change, which can be neither foreseen nor prevented, may occur to throw the river once more against the bank, the batture be cut away as rapidly as it formed, and the river return to its former channel near the foot of the bluff. It is well known that changes of this sort are constantly going on in all parts of this extraordinary river, and that where the bank is caving or washing away on one side a batture is usually forming on the opposite one. Whole acres sometimes settle down at once, bearing trees, cotton fields, and sometimes even the house of the planter. In other places, where the river has straightened itself by cutting through the land at a bend, plantations and settlements which had been established on the banks were left by its new course miles in the woods, with a mere lake before them. It is our opinion that the first of these catastrophes may be guarded against at this site by securing the outer edge of the bank in the way above described, and of the second there is no danger. Whatever weight these objections may have, they will apply with equal force to all parts of the river. This is the only situation in the harbor of Memphis proper at which a naval depot could be established; but having understood that a favorable site might be found at Fort Pickering, a town about two miles below Memphis, and believing it to be within the spirit of our instructions, we extended our examinations to that place. The bluffs here are something higher than at Memphis, and more broken into ravines. Between the foot of them and the river is a narrow strip of land, above ordinary overflow, but entirely too small for a navy yard. To obtain room here, it would be necessary to grade and level the Chickasaw bluff—a work of immense labor and expense. And even if this were done, the buildings and workshops would have to be erected on the hill, seventy feet above the building slips, for there is no room below. The river front which could be obtained here is also quite small; and a bar, having but little water on it, extends along a great part of it, leaving a very inadequate space for building and launching. The bed of the river at this place is of a rocky nature; and it is said no change has taken place along the bank since the settlement of Memphis. A plan of the site, furnished us by the citizens of Fort Pickering, accompanies this report.

No. 6. Height of the bank above the river at high water.

The height of the bluff above extreme high water is between forty and fifty feet. The low bank is then covered with from six to twelve feet of water.

No. 7. Height of the bank at low water.

The height of the bluff above the lowest water known is about eighty feet. The bank is then about twenty-eight feet above the surface of the iver. At average low water the bank is about twenty feet above the river.

No. 8. Protection against winds.

The mouth of Wolf river is a harbor for boats against all winds. The western front of the site is open to winds blowing across the river.

No. 9. Kinds and quantities of timber, iron, provisions, and supplies of all sorts, to be obtained.

Timber abounds here in great variety; of oaks, there are the white, the black, half over-cup, extreme over-cup, Spanish, willow, black and red post, and several others. There are also the black and honey locust, of large size, black walnut, maple of all descriptions, cherry, white and red elm, beech, sweet gum, yellow and white poplar, cypress, yellow pine, very large, easily obtained from the Tennessee and Hatchie rivers, and various other sorts not necessary to enumerate. The over-cup and willow oaks are esteemed but little inferior to the live oak. All these timbers are easily and cheaply obtained by water carriage. The iron of the Tennessee, which is esteemed equal to any in the United States, can be delivered here, square and round, at eighty dollars per ton; pig iron, best gray, at from twenty to twenty-two dollars per ton. Pittsburg coal delivered at ten cents a bushel, or three dollars a ton; Kentucky, Indiana, and Illinois coal, at two dollars and forty cents per ton. Tar, in abundance, at one dollar and fifty cents a barrel. The hemp of Kentucky and Missouri can be obtained in any quantity; and, from experiments made in the neighborhood of Memphis, it is thought a quality may be grown here equal to any in the United States. All kinds of provisions may be had in inexhaustible quantities from the valleys of the great rivers above, brought down in steam and flat boats, and sold at prices lower than they can be afforded at in any of the Atlantic ports. Iron works are on the Tennessee, Cumberland, Missouri, Mississippi, and Ohio rivers. By steamboat transportation, iron may be delivered at this point, from the works, in from two to three days, and by flat boats in from five to ten days. Specimens of some of the above-named timbers will be forwarded to the bureau of Construction and Repairs.

No. 10. Facility of procuring mechanics and laborers.

Mechanics and laborers may be procured here in any numbers from the upper country in from three to four days, and, from the cheapness of living, it is presumed at prices as low as in any portion of the Western country.

No. 11. Facilities of procuring stone, brick, and other materials for building.

Building stone can be delivered here, rough, at one dollar per perch; dressed and laid in two feet walls, at three dollars a perch. Tennessee marble, a beautiful material for building, at fifty cents per cubic foot, rough. Bricks of good quality, laid in the wall, for six dollars a thousand. Lime, in any quantity, can be had from the upper country.

No. 12. Practicability of obtaining water power.

Water power may be obtained, if necessary, by cutting a canal from a point about 11 miles distant, on Wolf river. A report and plan of survey of the route, by Colonel D. Morrison, made at the request of the mayor and aldermen of Memphis, accompanies this report. We have visited the location, and examined the line, and are satisfied of its practicability. It is believed that a right of way for this canal would be given to Government, and that it could be made within the sum specified in Colonel Morrison's estimate. There is a miscalculation in the report of Colonel Morrison, with regard to the power to be obtained by such a canal, but which does not affect the practicability of the route nor the expense of construction.

No. 13. Health of the adjacent country.

When Memphis was first settled, it had a very bad reputation on the score of health; but since the opening of farms and plantations in its vicinity, the thinning of the forests, the opening of roads, and the gradual clearing up of the country, it appears to have greatly improved, and is now considered equal, in this respect, to any point on the river. An official statement, by the board of health, for four months of last year, is presented herewith. The winter is said to be the most unhealthy season, when pleurisies and other diseases incident to a variable temperature are prevalent.

No. 14. Extent of the sites that may be found suitable, and the prices asked therefor.

The site surveyed contains eighty-two and a half acres, which can be increased on the north side of Wolf to a much greater extent, if desirable, at a low cost—say twenty dollars an acre. It will be seen that part of the site is embraced in the plan of the city of Memphis. The building lots are owned by various individuals, some of whom are at this time absent. Some part belongs to the city, while to other parts there are conflicting claims. The mayor and aldermen have made great efforts to remove all obstacles to obtaining for Government a clear and indisputable title; and we forward, herewith, a resolution passed by them, in which they undertake to sell the site to the United States for twenty thousand dollars.

The above details appear to us to convey all the information necessary to form a conclusion as to the *practicability* of establishing a naval depot at this place. Of its *expediencies*, in a national point of view, there cannot be a doubt. The reasons are too obvious, and have been too abundantly proclaimed, to require a repetition from us. This particular location is excellent for a building yard, but is perhaps scarcely sufficiently accessible for vessels in need of repairs.

We have the honor to be, with great respect, your obedient servants,

L. ROUSSEAU, *Captain.*
H. A. ADAMS, *Commander.*
STEPHEN JOHNSTON, *Lieutenant.*

Hon. A. P. Upshur,
Secretary of the Navy.

Act of the corporation of Memphis.

At a meeting of the board of mayor and aldermen of the town of Memphis, held on the 4th day of May, A. D. 1843, for the purpose of securing to the Government of the United States the ground surveyed in front of said town, by the commissioners for national navy yard and depot, the following act was unanimously passed by said board, to wit:

Be it enacted by the mayor and aldermen of the town of Memphis, That, for and in consideration of the sum of twenty thousand dollars, when paid, the mayor of the said town be, and is hereby, authorized and required to make a deed conveying to the Government of the United States the ground surveyed by Captain Lawrence Rousseau, Commander Adams, and Lieutenant Stephen Johnston, commissioners on the part of said Government for making a survey of the harbor of Memphis for a naval yard and depot, so long as it shall be used for that purpose, if said location be made within two years; said ground situated and lying and being in the front part of said town, and bounded as follows, to wit:

Beginning on the Mississippi river, on a line with the south side of Market street, extended to said river; thence running obliquely across Market street, extended over the batture to the north side of Market street, within one hundred feet of the houses on Front row; thence north along the west side of Front and Chickasaw streets, to the south side of Auction street; thence west, with the south line of said street, to Wolf river; thence, the same line continued, from the west side of Wolf river to the Mississippi river; thence down the Mississippi river to the north side of Wolf river at its mouth; and thence from the south side of Wolf river down the Mississippi river, to the beginning—to have and to hold the same, for the purpose above mentioned.

EDWIN HICKMAN, *Mayor.*

J. H. Lawrence, *Recorder.*

Memphis, *November* 9, 1843.

At a meeting of the mayor and aldermen of the city of Memphis, on the 8th instant, it was unanimously

Resolved, That the corporation of the city of Memphis, in the State of Tennessee, hereby propose and bind said corporation, if the Federal Government locate the naval depot and dock yard upon the site fixed upon by the commissioners at Memphis, to furnish the Government perpetually, from the time that may be agreed upon by the parties, two hundred horse power, and as much more as may be deemed necessary for Government purposes, of water, at the basin, at two-thirds the cost of steam power per annum; and guaranty the right of way for conveying the water from the basin to the docks, a distance of one hundred and twelve poles.

Resolved, That the mayor forward a copy of the above proposition to the Secretary of the Navy, signed and sealed in due form.

E. HICKMAN, *Mayor.*

J. H. Lawrence, *Recorder.*

Memphis, Tennessee *October* 28, 1843.

Sir: Agreeably to the orders of the honorable the Secretary of the Navy, we have revisited and continued our examination of the harbor of Memphis, and have the honor to report as follows:

We find the batture and low grounds adjacent, which, at the time of our first visit, were covered with water, now bare and dry, and at an average height of nineteen feet above extreme low water. That part of the batture embraced in the proposed site for a naval depot was not increased in surface by the overflow in the spring, and received but a very small deposite from the river.

The soundings taken at this time show a variation to have taken place, both above and below the mouth of Wolf river; above the mouth the Mississippi has deepened its bed six feet, while below it has shoaled three feet. The channel of the river has received no new direction, and the batture appears to have reached its limits. With a view to ascertain the quality of soil below the bed of the river, we made experiments, by boring in various places above and below the mouth of Wolf river, and found at an average depth of twenty-five feet below the present surface of the river, and about fifty feet below high water, hard bottom, apparently rock, or a conglomeration of gravel and other substances. From the imperfection of our implements, it was impossible to ascertain its character with more exactness. In passing downward through the batture, it was found to be saturated with water at and below the level of the river; formerly a sort of quicksand, with occasionally a thin stratum of hard earth, but not of sufficient firmness to support piles driven into it against the operations of the river, should its force be turned against them. The hard bottom below offers a better foundation. While the Mississippi continues to run in its present channel, it would perhaps be unnecessary to secure the bank by piles; levelling and filling up would be ample protection. Should any future change throw the current against this side, it will then be indispensable to protect it either by mason work from the rocky foundation, by piles, or some other effective mode. A group of islands, immediately above Memphis, divides the river into several branches, which are united again before passing the city. It is thought practicable to prevent the river from setting against the Tennessee shore, should it ever appear inclined to take that direction, by obstructing the passage between two of the islands, or between an island and the main land, so as to force it into other channels.

In our former report we stated that water power could be obtained by a canal from the Wolf river, at a point about 11½ miles distant, by a route which we had examined, and that a right of way for such a purpose would be given to Government. Since then arrangements have been made to construct this canal at the expense of the city. It is contemplated to reserve a sufficient amount of the water power it will furnish for the use of the navy yard, should it be established here. Distinct propositions on this matter will be transmitted to the Navy Department by the city authorities, as soon as the surveys and estimates are completed.

With regard to all other points to which our attention was directed, the results of our present examination and inquiries confirm the opinions and establish the facts set forth in our former report. We have the honor, &c.

L. ROUSSEAU, *Captain.*
H. A. ADAMS, *Commander.*
S. JOHNSTON, *Lieutenant.*

Hon. David Henshaw, *Secretary of the Navy.*

No. 18.

REPORT ON HEMP.

Report of the superintendent of the experiment upon the culture and manufacture of hemp, from the time of planting until the hemp is fitted for the brake; containing, also, remarks upon a method for the introduction of the culture and manufacture of hemp among the hemp growers in the United States, so as to produce a sufficiently strong article for naval purposes.

The Hon. A. P. Upshur, late Secretary of the Navy, evinced great interest in the introduction of a method of cultivating and manufacturing hemp as done in Russia, where the best hemp is obtained for naval uses.

Such a desire having been made known to me, I framed a short and condensed memorial, setting forth the method of cultivating and manufacturing hemp as done in Russia, my native country.

The said memorial was submitted to the honorable Secretary of the Navy by Colonel G. L. Thompson, chief engineer of the United States navy, who also expressed great interest therein.

Near the expiration of the last session of Congress, a printed report, containing two hundred pages, was received from Odessa, of an examination into the culture and manufacture of hemp in all of the hemp-growing countries of Europe, by Mr. Botowsky, an officer of the Rnssian Government.

Said report was printed at St. Petersburg, by order of the Minister of Finances, in the year 1842.

The report being in the Russian language, I offered myself as translator to the Hon. A. P. Upshur, who consented, with the remark that Congress had ordered a translation, and that a bill had been brought before the Senate for an appropriation to meet the expense, but Congress adjourned without passing the bill. I therefore undertook the translation, with the hope that Congress would, at their next session, pay me for my work, which is nearly completed, and only awaits the necessary corrections previously to going to press.

From the circumstances mentioned, the Hon. A. P. Upshur determined to make an experiment upon a small scale, for the purpose of ascertaining the possibility of obtaining an article similar in quality to that of Russia. I had the honor to be intrusted with the superintendence, and am still zealously engaged in completing the experiment.

Besides being a native of Riga, in Russia, where the best hemp is cultivated and exported, I have enjoyed the additional advantage of practical experience in the culture of this article for many years upon my plantation in the valley of the Wabash, in the State of Indiana; added to which, the information obtained from the translation now before me, of the latest reports of the principal hemp-growing countries of Europe, enables me to contrast the different cultures, so as to draw a result highly beneficial to the United States; and if practically pursued, must end in the production of an article equally strong, if not stronger than the Russian hemp.

The mode of cultivating hemp in Russia is not materially different from that of other countries, which may be seen by comparing the memorial made by me with the translation of the report of Mr. Botowsky; nor has the process received much alteration for centuries. Improvements have daily progressed in every branch of business, while this most important culture remains almost entirely neglected, and still shackled by prejudice and old custom, the worst enemies of husbandry.

Other means, even in this enlightened country, must be resorted to than printed instructions, which are read by few, and seldom practised. It is Government, and it alone, that can remove the obstacles that now clog this most important branch of farming; and if pursued in a proper way, so as to hold out inducements, the effect will be soon visible; nor will the time be far distant, when, instead of paying millions of dollars to foreign countries for supplies necessary for the navy, it will be found to be an article of considerable export.

The several monthly reports, submitted previously, contain all the details of the experiment, and shall be comprised in a general report to the committee that may be appointed in time to investigate the comparative strength of Russian hemp and that produced by the experiment, together with the operation of the newly constructed hemp brake.

Even in the most approved mode of curing water-rotted hemp, as practised until now, it will unavoidably occur that some of the fibres of a weaker stalk will begin to decompose before the stronger are ready to be removed out of the fluid. To remedy this, the hemp is generally removed from the water before the time the process has been completely finished; then the stalks are spread upon the ground, exposed to the weather until it appears that the woody parts separate with ease from the fibres; but, even with the best attention, it is impossible to prevent some of the fibres from decaying before the period of gathering has arrived. This latter part of the process is a part of dew rotting.

The process of dew rotting, especially when the hemp stalks are piled together in large cones, and suffered to remain so all winter, as in common practice among the hemp growers both of Indiana and Kentucky, should be entirely abandoned, as it gives the product a very dark color, weakens it, and renders it unfit for naval purposes.

In an experiment made upon my farm about twelve years ago, I found that if the hemp stalks were pulled in proper time, the seed and buds cut off, and set aside in a dry airy place until perfectly dried, then heated artificially not not above 212° Fahrenheit, that, though when exposed to the brake the woody parts did not give way so readily as the water-rotted hemp, yet, after working repeatedly, the fibres became sufficiently clean. The hemp so obtained had a yellow greenish color, soft, and resembling silk, being much superior in strength to hemp cured in the ordinary way, for the reason that the fibres are not weakened by decomposition, but retain all the strength that nature has bestowed upon them. Some small samples prepared in the above-mentioned manner have been submitted to the department, accompanying the monthly reports.

The new hemp-brake, now being finished, is solely calculated to break green hemp. Should it answer the expectation and purpose, it would be a matter of the greatest importance and consideration, as it would entirely remove the necessity of resorting to the most disagreeable and troublesome process of water rotting; the farmer could then pull his hemp with ease and at his leisure, without being compelled to have it all pulled in one day, as in the case of water rotted.

Twenty or more hands are necessary to gather an acre of hemp stalks—a number much too large, as I know from experience, to be readily obtained in a free State; and this is the strongest reason why the farmer in a free State is compelled to confine himself to a very small portion of his farm for hemp-growing purposes; whereas, if the mode of manufacture of the green hemp was generally introduced, the free would enjoy equally with the slave State both in quality and quantity of their hemp.

It is well known that tobacco yields a large profit when cultivated upon a rich soil; but the number of hands, and the attention it requires, forever places it out of the power of a free State to cultivate it to any extent. Hemp yields a still greater profit from an equal portion of ground; and, if treated in the process mentioned with regard to green hemp, there would be less trouble than in the cultivation of potatoes, and the product would be superior in strength to the best Russian hemp.

An important remark is necessary to be made in the culture of hemp. There are two species, viz: male and female—the former being entirely distinct from the latter; one bearing only flowers and extended branches at the top, the other seed gathered closely together in buds; the former, or male, is fit for pulling about six weeks before the female, and affords the softest and finest fibres, well adapted for the spinning wheel; the male should be pulled as soon as the blossoms and lower leaves drop; the female when the lower leaves have fallen, and the greatest part of the seeds ripened. All of the seed of hemp do not ripen at the same time; consequently, a part of the seed will be green when the hemp is gathered. The seed should be separated from the stalks, together with the buds that enclose the seed, and placed in a shady and airy place to dry. After this, the seed should be separated from the buds—a process attended with some difficulty, as it cannot be thrashed out, like other grain, without injuring it for further use; it should be rubbed. For the purpose of procuring the seed without injury, I have invented a very simple machine, which answers admirably, and intend to submit it to the committee.

The time of pulling the male hemp is generally neglected by all the hemp-growers in the United States, to my knowledge. By such neglect the farmer not only loses nearly one-fourth of the whole product of his best hemp, but by suffering it to remain standing perfectly dry among the green hemp, when exposed together to the process of either dew or water rotting, becomes decomposed before the green hemp is finished, and also spoils the color and corrupts the quality of the female hemp.

It may appear difficult to gather all the male hemp in a large field from the female plants. This is very easily remedied by ploughing furrows at a parallel distance of eight feet, which will act as a guide, and suffer the male to be gathered without molestation or injury to the other kind.

The experiment of cultivating and manufacturing hemp was commenced in April, on a piece or lot of ground, (No. 9, in square No. 20,) in the city of Washington, belonging to Captain W. Easby, containing seven thousand nine hundred and sixty-three square feet. It was not so well calculated for hemp culture as it first appeared to be; but, as the season was so much advanced, no choice was left. The seed sprouted badly, as the weather was directly opposite to that which it should have been to produce a good crop. The plants near the fence grew to the height of six feet, while that in the centre of the lot only attained that of three or four feet; so that the crop can by no means be pronounced fair. Still, if it can be proved that the fibres, obtained from short and weakly plants, should be equally strong, if not stronger than the best Russian hemp, then it will be evident that the treatment, as practised in the experiment, is to be preferred to any other.

My view was to find a solvent to separate the resinous substance from the fibre, without resorting to immersion, or dew or water rotting. The following trials have been successively made, namely: first, a solution of sulphate of soda; second, in a solution of carbonate of soda; third, in a solution of sulphate of iron; fourth, some cured with tan; some in a liquid that underwent fermentation. All of these experiments produced hemp, which differed but little from that cured in the ordinary way, with the exception of the color. It appeared, further, that the hemp cured in a solution of the sulphate of soda appeared much stronger than any before mentioned; but this fact shall be ascertained in time, by a trial of the comparative strength between those named and Russian hemp, before the committee.

The samples of hemp submitted to the Navy Department are of the following descriptions, viz:

1st. Green male hemp.
2d. Green female hemp.
3d. Water-rotted male hemp.
4th. Water-rotted female hemp.
5th. Dew-rotted hemp.
6th. Hemp cured in solution of sulphate of soda.
7th. Hemp cured in solution of carbonate of soda.
8th. Hemp cured in solution of sulphate of iron.
9th. Different samples cured in tan.
10th. Cured in a fermenting fluid.
11th. A sample of male hemp, which was left on the fields, and pulled together with the female. This latter sample will show how weak the fibres of the male are when left on the field longer than it should be. This neglect is exceedingly common, as before mentioned.

Should this sample be exposed, together with the female hemp, which at that time was perfectly green, to dew or water rotting, it would only be with the greatest attention cured, and would injure the color and quality of the whole, in addition to a loss of one-fourth.

The different solutions did not answer the expectation, in dissolving the resinous matter. A curious circumstance was discovered in the application of alcohol, which readily dissolved the resinous matter, but, after evaporating the alcohol, and making a second application of it, was found to be insoluble, though it dissolved easily in water, altering the matter, however, from resin to gum. Further experiments will no doubt lead to satisfactory rosults. Such a discovery may prove useful in the manufacture of hemp.

Government, in her wise decision, has now made the first step towards encouragement of this very important branch of husbandry, by appointing agents in Kentucky and Missouri, to investigate hemp that may be fit for naval service. It saves, as it has been remarked, the farmer a disappointment when he enters the market; but this is the limit. Should his produce be rejected, he returns home without being informed as to the mode of improving his culture. Therefore, if I am at liberty, I would respectfully suggest that the agent should not only be the examiner of hemp for Government, but that he should take a warm interest in the culture of this useful product himself, and be fully competent to instruct the farmer, so that he would be enabled either to avoid or correct his mode of cultivating hemp, in a language to be comprehended by the countryman. The method of holding out the prospects of a better price next season would operate more advantageously than many printed works and systems. Further, each agent should have in cultivation some few acres every year, to show practically a systematic operation, where any man who wished to learn the cultivation in all of its branches might be admitted, and assist in working the same. Slaves might also be sent by their masters for a season, for instruction, free of expense, with the exception of their board. It appears to me that this mode of operation would soon produce a new era in the manufacture of hemp all over the United States; and it may, knowing the enterprising spirit of the people, in a short time not only produce a supply for home consumption, but have a large surplus for export.

I would further suggest, that, in every State advantageously situated for this species of produce, there should be an agent appointed, as before mentioned. The expense for such an establishment would in a short time be amply repaid, as has been the case in the cotton and sugar plantations, which date their existence from the time Government held out inducements; and there is no doubt that such will be the case with the hemp manufacture.

It is known, by the report of the Russian officer, Mr. Botowsky, which I am translating, that Italy produces the finest and best hemp for linen and sail cloth in Europe.

Italy is between 40 and 45 degrees latitude, being a peninsula. Florida is between 20 and 30 degrees latitude, also a peninsula. It is also known that the temperature in the same latitude is much lower in the United States than in Europe, and that the temperature of Italy and Florida is very much the same. But we have much richer land in Florida than they have in Italy, except near the volcanoes. Therefore, better hemp could be produced more advantageously in the former place.

Should some of the numerous swamps in Florida be drained, which might be easily done, no better soil could be found. Then, if the Government should hold out proper inducements, immigrants would flock to that country, and in a short time make her to this country what Italy now is to Europe.

The before-mentioned translation from the Russian language upon the subject of hemp culture shall be finished and corrected in a few weeks, ready for the press.

I would respectfully ask leave to append to the translation such remarks as I shall deem (in accordance with my own experience) most expedient for the use of the United States.

All of which is most respectfully submitted, by your most obedient servant,

PETER VON SCHMIDT,
Superintendent of the experiments upon the culture and manufacture of hemp.

Hon. David Henshaw,
Secretary of the Navy.

No. 19.

Washington City, *November* 20, 1843.

Sir: I have the honor to report, that the officers under my orders preparing and bringing up the hydrographical results of the exploring expedition have been sedulously engaged in the duties of recalculating the observations and replotting all the work of the different surveys.

Since last March we have been enabled to put into the hands of the engravers forty plates, embracing upwards of seventy general and local surveys of the different groups and islands of the Pacific, which will be finished in the coming month, and ready for publication. These were all that could be given out at one time; the moment the above are finished, an equal number will be distributed. Every exertion is making to bring the duties to a close.

Respecting my own duties, under the Library Committee, in preparing the Narrative for publication, I have to report that it is very far advanced. The illustrations may retard it a short time, but I think before the month of March next that we shall be ready for the press.

The persons engaged in the care of the hall of the Patent Office, containing the specimens of natural history, &c., brought home by the expedition, are still employed. The necessary cases (fixtures for receiving the specimens, when classed and arranged by the naturalists of the expedition) are nearly completed.

A small appropriation will be required for the pay of the naturalists called to this duty by the department, and who are now employed describing the new discoveries for publication, and also for the pay of the keepers, messengers, &c. The enclosed paper will give you the items comprising the general amount.

I am, very respectfully, your obedient servant,

CHARLES WILKES.

Hon. David Henshaw,
Secretary of the Navy.

Appropriation required for the pay of the naturalists, &c.

Five naturalists, at $1,400 per annum	$7,000
Keepers, taxadermists, &c.	2,400
To complete the arrangements, fuel, &c.	2,600
	12,000

No. 20.

Washington City, *November* 23, 1843.

Sir: I have the honor to acknowledge the receipt of your letter of the 20th instant, and, in obedience thereto, most respectfully report:

Upon the execution of a contract for building a depot for the charts and instruments of the navy, in November, 1842, the President having designated University square, a site was selected, and measures taken for an early commencement of the work, the season being then too far advanced for more than a partial excavation.

Subsequent modifications of the dimensions and other material changes, advised by distinguished gentlemen in Europe, having received the approbation of the department, the labor was begun about the middle of April last, and has progressed with all desirable rapidity for a building of such character and extent. A brief statement of its present condition, together with that of the instruments and books, is presented—a report in detail being deferred till the final adjustments of the instruments are made, after the completion of the building.

BUILDING.

The principal part of the new depot is upon the line of D street north, at its intersection with the prolonged axis of 24th street west, this point being 95 feet above ordinary high-water mark. The central house is 50 feet square, two stories and a basement high, and surmounted by a hemispherical revolving dome, resting on circular walls elevated eight feet above the roof; the height from the ground to the top of the balustrade surrounding the house being 33 feet, and to the top of the dome 54 feet. It has three wings: those to the east and west are 26 feet 3 inches long, 21 feet wide, and 18 feet high; and that to the south is 20 feet long, with the same width and height as the others, a passage way, 10 feet square, dividing it from the house.

The masonry for the foundations of the walls and piers is of the most massive and durable kind, the greater portion of that for the piers and circular wall being laid with the best hydraulic cement. The piers of granite were all erected in July, and the brick work completed early in October last. The roofs have been sheathed, and the coppering will be completed in a few days. A part of the floors have been laid, the furnace for heating the building put up, the cast iron work for the revolving dome fitted, and plastering commenced. I hope, therefore, the work will be finished during the month of May next.

The magnetic observatory is 90 feet to the southwest of the preceding, and is, with its entrance way, entirely below the ground—the roof of the former being rather more than 4 feet from the surface. The entrance to it is from the basement, through a subterranean passage 93 feet long. This observatory is in the form of a cross; is 70 feet long in each direction, 10 feet wide, and 10 feet high. It is built entirely of heavy North Carolina heart pine, secured throughout with wood pins and copper nails, on dry, powdered clay, rammed hard around the outer planking, and is so constructed that any piece may be taken out for repairs. An inside sheathing permits the air to circulate freely around it, to prevent internal dampness; and an octagonal dome in the centre, fitted with double windows, admits sufficient light for ordinary purposes, whilst the volume of air between the windows is such as will prevent sudden changes of temperature. This building was covered over early in August, and is completed, except a little paint work. The range of temperature within it, since fitting the door and windows, as shown by self-registering thermometers, has been from 55° to 58½° Fahrenheit—3½°.

INSTRUMENTS.

The great telescope and the comet-searcher.—The successors of Frauenhofer, to whom was confided the construction of these instruments, authorized the astronomer royal at Munich to inform me, under date of July

20, that they would be completed at the specified time, viz: January 1st, 1844.

Mural circle.—The illness of Mr. Simms, who is making this instrument, (under the direction of the astronomer royal at Greenwich,) has delayed its completion; it will probably be shipped from London about the 1st proximo.

Transit for prime vertical.—Has been made by Pistor, at Berlin, under the superintendence of Encke, and was shipped from Hamburg, October 18th, via New York.

Transit for meridian.—Made by the Ertels, at Munich, and is doubtless on its way to the United States.

Should no delay occur in the receipt of these instruments, I expect to have them all mounted and ready for use about the 1st of July next.

Magnetic instruments.—These were received about ten days since, and are now in progress of adjustment in the observatory.

Meteorological instruments.—These were received last May, and are safely preserved; the erection of the registering arremometer being delayed till the completion of a superintendent's house.

BOOKS.

The books purchased in Europe last winter, and those presented at that time, have all been received; and those previously bound in boards, rebound in a strong plain manner. In addition to those mentioned in my report of March last, presents have been received during the year from—

The Royal Society of London;
Royal Astronomical Society, London;
Astronomer Royal at Greenwich;
Astronomer Royal, Munich;
Astronomer Royal, Berlin;
Astronomer Royal, Dorpert;
Professor Kreil, Prague;
Dr. Flügel, United States consul, Leipsig.

In conclusion, I most respectfully call your attention to an estimate, herewith submitted, for the enclosure of the public ground about the depot, and the erection of a suitable dwelling for the superintendent, both of which are immediately requisite for the protection of the public property.

Very respectfully, your obedient servant,

J. MELVILLE GILLISS.

Hon. DAVID HENSHAW,
Secretary of the Navy.

Estimate for grading and enclosing University square, and building a house for the superintendent of the depot of charts and instruments.

To grading 4,000 feet - - - - - -	$1,200
2,000 perches stone masonry - - - - -	6,000
4,000 feet fence - - - - - - -	4,000

House for superintendent, in addition to the balance of former appropriation	$7,500
Contingent	1,300
Total	20,000

J. MELVILLE GILLISS.

November 23, 1843.

No. 21.

Gibraltar, *August* 28, 1843.

Sir: It has become my painful duty to report to you that the United States steam frigate Missouri, under my command, has been almost entirely destroyed by fire. I arrived here on Friday night, the 25th instant, in seventeen days from Norfolk, and five from Fayal. The next day commenced taking in coal, filling up the water, overhauling the machinery, and making the necessary arrangements prior to leaving here on the Sunday following. After paying the customary honors to the Governor, by salutes from the ship, the Hon. Mr. Cushing and myself came on shore to pay our personal respects, first to our consul, Mr. Sprague, who afterwards accompanied us to the Governor, Sir Robert Thomas Wilson. We remained on shore, and spent the afternoon with our consul, intending to return to the ship in the evening; and I had ordered my boat to be on shore for us by 9 o'clock. At about 8 o'clock, a message was brought to me that the Missouri was on fire. I repaired, without a moment's delay, to the only gate through which I could pass the walls of the city, the others being, as is the custom, closed at sunset. (I learned afterwards, however, they were all thrown open, by direction of the Governor, the moment he heard of the fire on board the Missouri. I am pleased to mention here that every assistance was rendered to us by that distinguished gentleman, as well as from Sir George Sartorius, commanding Her Britannic Majesty's seventy-four the Malabar, as will be seen by a communication from me to those gentlemen, a copy of which I have the honor herewith to enclose.) My boat, fortunately had been sent as soon as the fire broke out; and I found her at or near the landing place. When I arrived on board, which was in about twenty minutes, perhaps, from the moment I received the startling intelligence, I found the flames raging with violence, and the officers and crew exerting themselves to their utmost to overcome them. Every person on board was disposed of or stationed in such a position where he could do the most possible good. The powerful pumps on board had with alacrity been rigged, with their hose attached, and were in operation. Those men who were not at the pumps were employed in drawing and passing water in buckets, and pouring it upon the flames. At a single glance, however, I discovered the prudence of flooding the after magazine, which was immediately done; the forward one having already, very prudently, been ordered to be flooded before I reached the ship. Soon after I did so, two engines, in large boats, well manned, came alongside. These were sent off by Sir Robert Wilson, the Governor; and by the able and energetic exertions of Sir George Sartorius and his officers, with the seamen from his ship, at one time I was in hopes that the devouring element was conquered; but, alas! the flattering hope was soon dissipated by its breaking out again with increased violence. This only increased the energies and zealous efforts of the officers and crew of the Missouri and our friendly auxiliaries, until they were driven from their stations by the flames. When I saw there was not a ray of hope left to save that noble ship, I summoned a council of the officers, and those English officers who were near me, to ascertain their views; they quickly and unanimously decided there was no hope left of saving the ship. I therefore gave the order for every person to quit her without delay and without confusion, for by this time there was very little space remaining for those on board to stand clear of the flames and smoke; the wind had increased, and the ship was in flames fore and aft. The crew immediately took to the water, and received the ready assistance of boats anticipating the exigency from Her Britannic Majesty's ship Malabar and from the vessels in the harbor. Such was the state of the ship when the officers and crew were compelled to give her up, that hey saved nothing but what they stood in.

After I had seen every person out of the ship, I lowered myself down by a rope from the starboard wheel-house, and was taken on board one of the boats in waiting. This occurred at half past eleven o'clock. The immense number of boats surrounding the burning ship at this time were directed to pull out of the way as fast as possible, fearing, lest the magazines might not have been effectually flooded, an explosion might take place; and in that event the loss of life would have been great. Fortunately, however, the magazines did not explode until three o'clock in the morning, so completely were they flooded; and, as they exploded under water, the shock was not severely felt. At the polite invitation of Sir George Sartorius, the crew were sent on board his ship, the Malabar, and have remained there until to-day. I have had them removed to a ship chartered for the purpose of conveying them and the officers to the United States.

As the officers and crew have, by this unfortunate and unlooked-for event, been rendered completely destitute of clothing and every thing else, it has become absolutely necessary, for the preservation of their health and comfort, to have them supplied immediately with comfortable wearing apparel; and I have directed the purser to make the necessary purchases.

The ship chartered is the Rajah, 600 tons, of Boston, and bound to that port, and will sail in eight days from this date. I have had the crew employed, as well as lighters from the shore, in saving as much of the property as possible from the wreck. The guns, anchors, chain cables, &c., will probably be recovered in time to send them by the Rajah, and all such articles as can be got from the wreck before she sails. The remainder will be sent to the United States by the next vessel which sails from this. The machinery, boilers, and many valuable parts, will be recovered. After saving all that is valuable, or can be of any use whatever, I will request Mr. Sprague, our consul, to sell the remainder to the best advantage. Until to-day I have not been enabled to ascertain any satisfactory evidence as to how the fire originated. The following, sir, is the testimony of three coal heavers, who were at work at the time in the engine room, and in the vicinity where the fire broke out. I will state the circumstances in their own words, taken down as they related them.

John Sutton states that "about ten minutes to eight o'clock, I went in the starboard engineer's store room, with a globe lantern, to get a pair of beam scales to weigh coal, which they were at that time taking in. In getting down the scales a wrench fell and broke a glass demijohn, containing spirits of turpentine. I wiped up as much as I could. I then went down to the cylinder, where they were at work, to see how much of the spirits had run down. I was on my way to the chief engineer, to report the circumstance of breaking the demijohn, and had just got on the berth-deck ladder, and had not reached the spar deck, before I heard the cry of fire. I turned round immediately, and saw the flame bursting up through the gratings above the steam chest. I ran on deck, got a fire bucket, and endeavored to extinguish the flame."

William J. Williams states: "I was by the starting bars in the engine room, at work on the outside of the cylinder. We heard something dripping down, and we sung out to Sutton not to be dropping his water here, (for there was usually a bucket of water kept in the store room above.) He said, you need not be afraid—no more would be coming down. We went on in our work, and the first thing I heard *Clum* sing out fire; at the same time I saw the flame burst up suddenly from the *felt* and canvass which was around the steam chest. I jumped with *Clum* to the steam chest and pipe, and endeavored to haul the felt off, which we were not able to do. I then went to work to try and extinguish it."

Alfred Clum states: "I was at work putting on the cover of the cylinder, I saw saw something like water dripping down, and I sung out to Sutton, who was in the store room above; he said something which I did not understand. I had a light near me; and the water, as I supposed it to be, had nearly wet through the felt and canvass which was around the steam chest, when it fell down upon my lamp, which was below. Immediately the whole felt and canvass was in a sheet of flame, and, together with Williams, I tried to haul the felt off, but could not succeed. The flame blazed up and caught the boards which made the flooring of the store room immediately above. It was impossible to work about the packing of the cylinders with a lantern."

There is no doubt on my mind, sir, as to the correctness of the above statement; and to that circumstance alone must we attribute the dreadful calamity which has overwhelmed myself and officers with the deepest and most painful feelings—the destruction of our noble ship.

During the sad and melancholy scene, I am happy in having it in my power to bear testimony to the zeal and firmness of all the officers; they evinced on this trying occasion a coolness which does them infinite credit, and is alike honorable to themselves and to the service.

The crew, also, did their duty like men, and deserve well of their country; there are three or four who were particularly distinguished for their zealous efforts and good conduct, and of whom I will speak in another communication.

If, on a review of all the circumstances connected with this disastrous occurrence, you, sir, should deem it expedient that a court of inquiry should be directed to investigate the facts in the case, I should be much gratified if such a course should be adopted.

I have the honor to be, most respectfully, your very obedient servant,

JOHN THOMAS NEWTON, *Captain.*

Hon. DAVID HENSHAW,
Secretary of the Navy.

GIBRALTAR, *August* 29, 1843.

SIR: I have the honor to enclose, herewith, copies of a correspondence between his Excellency the Governor of Gibraltar and Sir George Sartorious, in command of Her Britannic Majesty's ship Malabar, and myself.

I have the honor to be, most respectfully, your obedient servant,

JOHN THOMAS NEWTON, *Captain.*

Hon. DAVID HENSHAW,
Secretary of the Navy.

GIBRALTAR, *August* 28, 1843.

SIR: I desire to embrace the earliest opportunity to express to your Excellency, and to the officers of the garrison of Gibraltar, my deep sense of gratitude for the generous and untiring zeal displayed by them, under your Excellency's immediate personal direction, on the night of the 26th instant, in the combined efforts made to extinguish the disastrous conflagration by which the United States steam frigate Missouri was destroyed; and I beg leave to assure your Excellency of the satisfaction it will afford me to make known to my Government circumstances so well calculated to strengthen and confirm the relations of amity at present so happily subsisting between Great Britain and the United States.

I have the honor to be, with high respect, your excellency's obedient servant,

JOHN THOMAS NEWTON,
Captain U. S. Navy.

His Excellency Sir ROBERT THOMAS WILSON, &c.,
Governor of Gibraltar.

GIBRALTAR, *August* 29, 1843.

SIR: The expressions of acknowledgment which your letter conveys for the cordial efforts made to save the United States steam frigate Missouri, under your command, and eventually to rescue her gallant crew, are rendered still more gratifying by the exemplary proof of meritorious exertion and devotion afforded by yourself in the discharge of your various responsible duties on that trying occasion.

If any good offices, rendered with heartfelt zeal, should contribute to knit more closely the amicable relations which now happily unite our respective countries, it will be the most gratifying result to which we could aspire.

With every wish for your future welfare, I remain, with sincere regard, yours, very faithfully,

R. T. WILSON,
General and Governor.

Captain JOHN THOMAS NEWTON,
United States Navy.

GIBRALTAR, *August* 28, 1843.

DEAR SIR: I have not words to express the emotions I have experienced in witnessing the prompt and efficient aid afforded by yourself in person, and the officers and crew of Her Britannic Majesty's ship Malabar, in the attempt to extinguish the fire by which the United States steam frigate Missouri was destroyed on the night of the 26th instant—your active assistance in rescuing the crew of the burning ship, when all further effort to preserve her was found to be unavailing; your generous hospitality in receiving the chief part of the crew on board the Malabar, and affording them the succor they so much needed, until arrangements could be completed by me for disposing of them elsewhere; and the considerate and cordial kindness since manifested by you in rendering me every possible assistance in the provisions to be made for saving what of value remains of the wreck of the Missouri, and for the restoration of the ship's company to the United States. Next to the consciousness of having discharged my own duty, your generous sympathy is one of the greatest alleviations of the heavy misfortune of the destruction of the Missouri while under my command.

I shall never cease to remember your deportment on this occasion with the deepest gratitude, and to regard it as alike honorable to yourself and to your Government; and I am, with perfect esteem and respect, your obedient faithful servant,

JOHN THOMAS NEWTON,
Captain U. S. Navy.

Vice Admiral Sir GEORGE SARTORIUS, &c.,
Her Britannic Majesty's ship Malabar.

GIBRALTAR, *August* 29, 1843.

DEAR SIR: I have received your letter with mingled feelings of pleasure and regret: pleasure, at the manner in which you are pleased to look upon a single act of duty on our part towards suffering fellow-beings; regret, for the heavy infliction of mental suffering which the recent awful event must have caused you and your officers, but you more particularly, as the commander.

Accept, then, the warmest sympathy of the officers of the Malabar and myself. We trust it will not be long before the judgment of your country will relieve you from further anxiety, by confirming the opinion we all entertain here, of the determined courage, zeal, and devotion, displayed by yourself, your officers, and men, on the late distressing occurrence.

With my best wishes for your welfare and happiness, believe me, dear sir, very faithfully yours,

G. R. SARTORIUS.

Captain JOHN T. NEWTON,
United States Navy.

No. 22.

Navy Yard, Washington, *November* 28, 1843.

Sir: I have the honor to report that the experiments on the evaporative power of different coals, which have for some time past been carried on at this place, were concluded on the 18th instant. The examination of the other properties of the same materials, by such practical tests as can be here applied, is rapidly approaching its termination. The chemical analyses of some of the varieties hitherto operated on are yet to be performed. The large mass of facts collected during this research, referring to numerous points, and all of which are important to a full comprehension of the subject, is undergoing the examination and comparison which will enable me to present, in a final report, the respective and comparative values of the several kinds of coal, for the different purposes for which fuel is employed.

A few weeks must unavoidably elapse before all these materials can be reduced to the required form, and furnished with the necessary drawings and illustrations.

In the mean time, I beg leave to offer, in this preliminary report, some general statements relative to the origin, purposes, extent, and character of the researches which have been undertaken, and the nature of the results to be deduced from them.

The inquiry, now nearly completed, was instituted by your immediate predecessor, the Hon. A. P. Upshur, primarily on account of the difficulty which had been experienced, and the complaints which had been made, relative to the qualities of the coals procured for the naval service. It had been found that articles furnished to the Government at full prices did not answer the expectations of those concerned in their consumption. While paying the highest prices for fuel, the efficiency of our steam vessels was sometimes impaired by its inferior quality and the large amount of its impurity. Some few experiments on the subject had previously been made, under the authority of naval officers, but with means and appliances little calculated to afford the desired information.

It was evident, that while securing the primary object, that of increasing the efficiency of the navy, the investigations must inevitably exercise a salutary influence on other branches of public defence, and be more or less felt in many important national interests. The possession by any country of a resource so important as extensive deposites of mineral fuel may be justly regarded as an object of pride and pleasure, not less than one of universal *interest*. In some countries of Europe, it is well known all mines belong to the public domain, even when found under a soil which is private property. Hence they are developed with the best resources of science, managed under the authority of special laws, and husbanded with the greatest care, to prevent unnecessary deterioration and waste. The Government of the United States, though not possessing this direct interest of proprietorship in mines, has still such a stake in the value of their mineral resources, and the prosperity of citizens more immediately concerned in making them available, that the least which could reasonably be expected of it is to aid in some measure in ascertaining their true value.

The department accordingly issued, about the middle of April, 1842, a notice inviting the proprietors of mines, and others interested in the mining and sale of coals, to forward to this place, at their own charge, samples of their respective materials, engaging on its part to cause the same to be fully and impartially tested.

The question of the value of coals for the purpose of generating steam is of course mainly dependent on their heating power—that is, on the weight of water which a given weight of coal, burned under a given evaporating vessel, can convert into steam while undergoing combustion. But this is not the only circumstance requiring investigation, in order to decide their value, even for the purposes of sea-going steamers. The weight of a given bulk of each coal in its merchantable condition; the manner in which it burns, whether with much or little flame; the amount and character of its incombustible ingredients; its facility or difficulty of ignition; the perfection of the combustion, or the proportion of the whole amount consumed to that of the combustible matter placed upon the grate; the concentration or diffusibility of its heat; the proportion of humidity, and that of the sulphur which it may contain, with the consequent liability, under certain circumstances, to undergo spontaneous combustion—are all points requiring attentive consideration. In addition to these, we have the question of the manner in which each coal behaves when coming to the temperature of ignition: its tendency either to retain its original form; the nature and extent of that change, when it occurs, whether by simply cracking and disintegrating into angular fragments, or by enlarging the bulk, rounding away and obliterating the angles, and yet not agglutinating, mass to mass; or, finally, by wholly changing its form and consistence, swelling to a great degree, and cohering so as to form a nearly continuous roof, and thus impeding the passage of air through the ignited coal. In some cases, the question of the amount of solid matter which accompanies the gaseous products of combustion in the state of smoke, becoming soot upon the flues of the apparatus in which the combustion is conducted, is one of great practical importance. Of these incidental questions, the amount and character of the incombustible ingredients of different coals is a point eminently deserving of notice. It indicates the deduction which must in all cases be made from the heating power of an equal weight of the coal, considered as pure combustible matter. It shows the extent and kind of labor requisite in managing the furnace. It warns us what to expect in regard to the durability of grate bars, and the adhesion of scorial to those important appendages of the furnace.

All these subjects must necessarily engage the attention of engineers and furnace men, and no little portion of the good or bad character in coal may be considered to depend on these circumstances. The relation of the incombustible ingredients of coal to each other is often such as to render the mixture fusible at the temperature of ordinary furnaces, or at least to be, in a certain proportion, reduced to a pasty coherent mass upon the grate, impeding the passage of air, leaving another portion unvitrefied, and capable of passing through the interstices between the bars. For different coals this proportion is very different, even when the combustion is conducted as far as practicable in the same manner, and with the same intensity of heat. In fact, there is scarcely an aspect in which this subject can be viewed, which does not open points of inquiry and comparison of the greatest practical importance to the naval service.

It is not, however, solely with reference to their evaporative power or their use under steam boilers that coals are of importance to the navy of the United States and of all other maritime nations. The very introduction of steam machinery into the navy has largely augmented the amount of workmanship in metals demanded for that branch of service, and the substitution of iron for wood in the vessels themselves is destined vastly to increase the demand for such varieties of fuel as are best adapted to the various metallurgic arts. It was therefore evidently proper, in directing the investigation of the subject of the evaporative power of coals, that the department should require, as it did, the researches to be extended to all their applications. By instituting inquiries intended primarily for its own use and benefit, the Navy Department will have incidentally rendered an equal service to many important branches of art in the country. By inviting, as above stated, the proprietors of mines to furnish their respective coals for trial, it afforded to the mining interest an opportunity of ascertaining the relative value of their own products, as compared with those of many other districts and of foreign countries; and, especially, of having the peculiar adaptedness of each to its specific object clearly designated. While so large an amount of both labor and capital is embarked in the mining and transportation of coal, and so many branches of industry depend on it for the successful prosecution of their labors; while so much of domestic comfort and so much of national wealth are even *now*, in the infancy of our mining operations, made to rely on this material; and while steam navigation upon the ocean, and eventually that upon our internal waters, must all be performed by its aid, we are warranted in the assertion that few subjects of a practical nature are more deeply and immediately interesting to the public. In this view we are sustained by observing how essentially it has contributed to the power and influence of one of the most commercial nations of the world. The coal deposites of a small island, which would itself scarcely cover one of the coal fields of the United States, have afforded the chief means of carrying her conquests to the remotest parts of the globe.

In this view of the value of coal formations, wherever they may exist, it was evidently important to decide, by direct and practical tests, the comparative usefulness of American and foreign coals, as well as the relative value of the former, in their numerous varieties. The point of greatest interest, the heating power of combustible bodies, has heretofore been sought to be determined by several different methods. The standard proposed by Lavoisier, and adopted by other chemists, was the weight of ice melted by the combustion, either in atmospheric air or in pure oxygen gas, of a given weight of the combustible body. The heat becoming latent during the liquefaction had been previously ascertained. The scale of experiments conducted on this principle was not a *practical* one; small specimens do not always faithfully represent large masses; and, in addition to these objections, a portion of the ice liquefied was liable to be recongealed before leaving the apparatus, so that the weight of water collected was not in every case a true index of the heat imparted. Great discrepancies occurred in the results.

By other experimenters, including Count Rumford, the mere rise of temperature in water has been employed as a standard of heating power. But the limited range of temperatures to which the experiment is confined requires that either a large quantity of water or but a small portion of fuel should be employed. The results would also fail of eliciting some of the important characteristics of coal, which can be fully developed only after a continuous action of some hours and the use of considerable quantities.

The standard adopted by Mr. Marcus Bull, who some years since gave to the world a valuable series of experiments on the heating power of wood and coal, was the length of time during which a given difference could be maintained between an interior apartment in which combustion was conducted, and an exterior one which was exposed to the cooling effect of the surrounding air, by the consumption of a given weight of each kind of fuel.

The experiments of Mr. Bull were, it is understood, generally limited to a pound or two of each combustible.

The mining engineers of Cornwall and other parts of Great Britain have formerly used as a measure of heating power, the weight of water which could be raised one foot high by the consumption of a given *bulk* of coal, when burned under steam boilers which supplied the pumping engines at their mines. This standard is evidently liable to the objection, that it complicates the question of the heating power of coals with that of the mechanical structure of engines, the *production* of steam with its mode of application—questions wholly distinct from each other, and requiring independent solutions.

The distinguished mining engineer, Berthier, of Paris, proposed the employment of the oxide of lead as a material from which to obtain oxygen to effect the combustion of different substances, and made the weight of lead reduced from the state of oxide, by a given weight of each combustible, a standard of its heating power. The composition of the protoxide of lead, or litharge, is well known; and the method of Berthier takes it for granted that the heating power of combustibles is proportionate to the weight of oxygen absorbed. The weight of lead reduced thus becomes indirectly the measure of heat developed.

The German and other European chemists have sought to attain a knowledge of the heating power of fuel by ascertaining the precise chemical composition of the combustible portion, and thence inferring the weight of oxygen which must enter into chemical combination with it during combustion. To supply the oxygen, they have had recourse to compounds, which yield it readily, and in sufficient abundance—such as the chlorate of potash, the peroxide of copper, and the chromate of lead; but instead of collecting potash, copper, or lead, reduced, which would be impracticable, they collect and weigh the gaseous products of combustion—the water and carbonic acid, and from the known composition of these infer the weight of oxygen absorbed, respectively, by the hydrogen and carbon of the fuel. This is in reality no other than the method of analysis so successfully applied, of late years, to discover the composition of organic substances—among which *coal* is undoubtedly to be ranked. The quantity employed in analyses of this kind seldom or never exceeds ten grains.

None of the above-described methods appeared to fulfil the conditions required, in a practical determination of the evaporative power of the several kinds of coal.

Preference was therefore given to that which has, to a limited extent, been employed by Mr. Fyfe, of Edinburgh; Mr. Schaufhautl, and Messrs. Parkes & Mauby, in England; and by Dr. Dana, Mr. Hayes, and Mr. Francis, in this country. This method consists in burning the coals under a steam boiler, so arranged and furnished with apparatus as to be capable of complete regulation. The water delivered to the boiler, and the coals supplied to the furnace, are determined both by weight and measure. The supply of air, the rate of combustion, the pressure and temperature of steam, the proportion and character of the products of combustion, both fixed and volatile, whether left on the grate or passing through the flues, are subject to careful observation and experiment. Here the standard by which we measure the heating power of different coals is the weight of water which a given weight of each can evaporate from the temperature of 212° Fahrenheit. This standard is probably as constant as any in nature.

With *experiments* conducted on this principle, the *practice* of generating heat for steam navigation, and for many other useful purposes, will be found to correspond in all essential circumstances.

The number of samples of coal on which trials of evaporative power have been made is forty-one ; of these, *nine* were anthracites from Pennsylvania, viz :

Two from the Beaver Meadow mines, sent for trial by the Beaver Meadow Railroad and Coal Company ;

Two from the same mines, procured by the department for use in the steamer Union ;

One from the Lehigh Coal and Navigation Company's mines, sent by that company ;

One from "Lackawanna," sent by the Delaware and Hudson Canal Company ;

One "Peach Mountain" Schuylkill coal, sent by the Delaware Coal Company of Philadelphia ;

One from Forest Improvement mines, Broad Mountain, Schuylkill county ; and

One from Lykins's Valley Coal Company, Dauphin county.

The mean weight, per cubic foot, of all these samples, taken in the state in which they came to hand, as determined by actually weighing and measuring the whole of each sample at the time it was burned, was found to be 53.505 pounds. They are all characterized by retaining their form while exposed to the heat of ignition—undergoing no proper intumescence while parting with the small portion of volatile matter which they contain, or only being cracked and disintegrated into angular fragments. Their flame is generally short, of a blue color, and consequently possesses but little illuminating power. The last-mentioned coal, however, (that from Lykins's valley,) though possessing the principal features of anthracite, is also possessed of more than the usual quantity of volatile matter, gives a considerable quantity of luminous flame, burns with more freedom than the generality of anthracites, and hence constitutes a proper link of transition to the next class, or that of the *free-burning* semi-bituminous coals. Of these, twelve samples have been tried for evaporative power, viz :

Six from the coal field in the neighborhood of Cumberland, in Maryland, embracing—

One from Atkinson's mines ;

One from Neff's mines ;

Two from Easby's mine, called "Coal in Store ;" and

One from a quantity of "Cumberland" coal purchased for the use of the navy yard.

Also, six from Pennsylvania, embracing—

One from Karthaus, on the west branch of the Susquehannah ;

One from Cambria county, sent by J. Brotherline ;

One from Lycoming creek, sent by A. McIntyre, from near Ralston, Lycoming county ;

One from Blossburg, Tioga county, sent by the Arbon Coal Company, J. W. Johnson, agent ;

One from Quin's run, Clinton county, by McDonald & Hallenback ; and

One from Dauphin and Susquehannah Coal Company, by Isaac Lea, Esq.

Of these coals, the mean weight per cubic foot, in their marketable condition, is 52.844 pounds. They generally ignite readily, burn with a flame of moderate length, produce considerable intumescence, and, with one or two exceptions, but little agglutination, in coking.

Their respective peculiar properties will be understood from the tables and explanations hereafter to be reported. The form of masses of these coals is in some cases partly preserved in the coke, but a rounding of the edges and enlargement of bulk clearly distinguish them from all the anthracites.

The next class of coals is that from the bituminous coal field in the neighborhood of Richmond and Petersburg, in Virginia, of which *eleven* samples were examined. Of these—

Four were from the Midlothian mines, furnished by the Midlothian Coal Company ;

One from the same mines, procured for use in the navy yard ;

One from Crouch's and Sneed's mines, Henrico county ;

One from the Chesterfield Mining Company, Chesterfield county, formerly "Blackheath pits ;"

One from the Creek Coal Company ;

One from the Deep Run mines of J. Barr, Esq. ;

One from the Tippecanoe mines, near Petersburg, P. D. & J. D. Osborne & Co., agents ; and

One from the Clover Hill Company, near the same place.

The mean weight per cubic foot, of all these coals, was found to be 49.276 pounds. They burn with a long flame, swell considerably on being ignited ; the masses cohere, and form a coke, in which the original form of the coal is wholly lost. They correspond in many particulars, both in form, composition, and heating power, with the foreign bituminous coals, of which six varieties were tried, viz :

One from Sidney, Nova Scotia, sent by the Cunard Coal Mining Company, Mr. Henry Boggs, agent ;

One of Pictou coal, sent by the same.

Also, one sample of Scotch ;

One sample of Newcastle ;

One sample of Liverpool ; and

One sample of Pictou—all procured by order of the department from Messrs. Laing & Randolph, extensive dealers in coal at New York.

Of these foreign samples, the weight per cubic foot is, on an average, 49.845 pounds, corresponding very nearly with that of the Virginia coals of the preceding class. As all these coals are found more or less extensively in the markets of our Atlantic cities, it was deemed expedient to give them a full and faithful examination, as well as all the samples sent from the different mines in the United States.

Being among the most celebrated varieties of coals known abroad, they often claim the attention of American as well as other purchasers; and, being of well-established character, they will serve as common terms of comparison between the American and such foreign varieties of coal as are not represented in this series.

The coals of the United States, above named, are, it will be observed, all from the eastern slope of the Allegany mountains. The two following are the only ones from the Western coal region, or great Mississippi basin:

One sample from Cannelton, Indiana, about one hundred miles below Louisville, Kentucky, sent by James Boyd, Esq., of Boston;

One sample from Hepp & Co., of New Orleans, Louisiana; locality not yet ascertained.

The mean weight of these two samples was found to be 47.23 pounds per cubic foot. They burn with extreme activity, giving a long flame, and yield a light friable coke.

Besides the above classes, one sample was received from Messrs. Deaton & Burr, of that singular and interesting material, known as "natural coke," from a mine of recent exploration, on Tuckahoe, Virginia. Its weight per cubic foot was found to be 46.66 pounds. Two mixtures of anthracite and bituminous coal, in certain proportions, and two species of coke, one from the Midlothian coal, of Virginia, and the other from Neff's Cumberland coal, were also tried. The mean weight per cubic foot of these artificial cokes was found to be 32.57 pounds.

The series of experiments on evaporation was terminated by a single trial of the effect of dry pine wood, of which a quantity had been used daily in heating up the apparatus and preparing it for the reception of coal.

On each sample of coal were made from one to six trials, according to the quantity furnished. The coal consumed in one trial never exceeded 1,567 pounds, this being the greatest quantity which the apparatus could receive in the period allotted to each experiment, including the time necessary for clearing out the residua, making the necessary adjustments, and preparing for a new trial. The total weight of coal consumed in the trials of evaporative power has been nearly 62¼ tons, and the weight used, on an average, 978 pounds per trial. This statement may be sufficient to indicate that the experiments have been made on a scale unobjectionable on the score of magnitude.

The experiments on evaporation were barely commenced in the autumn of 1842, but only so far prosecuted at that time as to test the working of the apparatus.

They were recommended on the 5th of April, 1843, and were unremittingly prosecuted, as above stated, until the 18th of the present month. Including the trial of wood the whole number of experiments occupied one hundred and forty-four days. On each day, continuous observations were made during a period averaging from twelve to fourteen hours, according to the requisitions of the experiment.

In the mean time, trials were made on specimens of all the samples, to test the results of Berthier's plan, as compared with the practical method above described.

The extensive smith shops of this navy yard afforded the means of testing (whenever the amount and nature of the sample allowed) the character of each coal for the working of iron.

As it is, however, generally very difficult in ordinary smiths' work to establish a standard of effect for this application of coals, the observations must be mainly confined to the behaviour of the coal in burning; the kind of fire it will form, whether hollow or otherwise: the amount and quality of the cinder it will leave, and its effect upon the iron to which it is applied.

An attempt was made to institute in the chain cable shop a standard of comparison for heating power between the several coals, by employing a given weight of each in making the links of chain of a given size. A part of these trials have just been completed, and no time has yet been allowed to institute comparisons, but it is believed they will generally confirm those results obtained by evaporation.

The several samples of coal have been, or will yet be, analyzed by the ordinary method of determining the relation of the moisture, sulphur, fixed carbon, gaseous matter, and earthy residua. A number of the samples have been subjected to trial by the organic method already alluded to.

To give the entire amount of information which the research was intended to elicit, the tables of observations, with the accompanying notes and explanations, aided by the illustrations now in progress, will be found indispensable. As the labor of experimenting is not yet terminated, any attempt to give a precise designation of the rank of each sample might not only fail of its object, but do considerable injustice.

I cannot conclude these remarks without expressing the high satisfaction which I have felt at the zeal, ability, and assiduity, with which my principal assistant, Dr. Henry King, has seconded all my endeavors to render these researches worthy of the important subject to which they relate, and worthy alike of the acceptance of your department. To the other assistants and artisans employed in the labors of the experiments a like tribute is due, for the intelligence and punctuality with which they fulfilled the duties severally assigned to them. To the successive commandants, Captains B. Kennon and J. H. Aulick, with the other officers of the yard, to the principal engineer and machinists, justice also requires that I should express my acknowledgments for affording the needed facilities for these experiments, and promptly seconding the views of the department, as expressed in the instructions given at the time of their commencement.

I am, sir, very respectfully your obedient servant,

WALTER R. JOHNSON.

Hon. DAVID HENSHAW,
Secretary of the Navy.

REPORT

OF

THE POSTMASTER GENERAL.

Post Office Department,
December 2, 1843.

Sir: It is cause of satisfaction to the undersigned, in submitting to you a statement of the condition of the Post Office Department and its operations for the past year, that he is enabled to say, for the two years he has had the honor of superintending its affairs, the annual current expenses have been met by its annual revenue; that an extension of the service has been made, commensurate to the growth and spread of our population.

The idea of making the Post Office Department a source of revenue to the Government has not been entertained by any one charged with its management since the termination of the last war, during a short period of which an increase of fifty per cent. upon the then rates of postage was imposed for revenue purposes; nevertheless, the principle upon which it was originally established, that its expenditures should be limited by its income, has been distinctly engrafted upon all the legislative enactments concerning its organization, and prescribing the duties of those charged with their administration.

I have thought this principle, upon which the department has been established, a sound and safe one for the Government, and am opposed to its abandonment. If, however, the expenditures of the department were fixed by law, and appropriations from the general Treasury annually made to meet them, much of that labor and responsibility in the supervision of the service, which now rest upon its chief, would be removed.

It is no small task, to say nothing of the responsibility, so to adjust the mail service of the United States as to accommodate the wants of the community, and at the same time to produce, by its own operations, the revenue to meet its own expenditures. This reflection suggests to me the propriety here of doing an act of justice to those who have been associated with me in this department, by a frank acknowledgment of the able assistance which they have given by their constant and zealous labors; thus enabling me to give to the country the best service which the means of the department would allow.

The amount of annual transportation of the mail, as ascertained on the 30th June, 1842, was 34,835,991 miles, the cost of which was $3,110,782.

The amount of annual transportation on the 30th June, 1843, was 35,252,805 miles, the cost of which was $2,976,284.

It will be observed that the cost of transportation for the last year was less by $134,499 than it was for the previous year, whilst the transportation throughout the year was greater by 416,814 miles.

The number of post offices supplied in 1842 was 13,733, and the number supplied in 1843 was 13,814.

To accommodate the service to the extension of population, reductions in the service in some sections and an extension or increase in other portions of the Union were rendered necessary.

The aggregate of these reductions was $134,253, and the amount of additional and new service was $98,555. For a more detailed statement of service, I refer your Excellency to the report of the First Assistant Postmaster General, (No. 1.)

For similar reasons, it became necessary to discontinue, in the year preceding 1st July, 1843, 400 post offices, and to establish, during the same period, 481.

The total expenditures of the department for the fiscal year ending the 30th June, 1842, as stated in the report of this department to the House of Representatives, under date of the 28th of February, 1843, were $4,975,370 42. In this amount was included $392,664 51 for debts paid out of the special appropriation at the extra session.

The total expenditures of the service for the year ending 30th June, 1843, were $4,374,713 75, including payments on account of debts due by the department, for which the appropriation above was made.

The amount of gross revenue for the year ending the 30th June, 1841, as stated in my annual report of 3d December, 1842, was $4,379,317 76; that of 1842 was $4,546,246 13.

The revenue of 1843, so far as the returns exhibit the amount for the year ending 30th of June, is $4,295,925 43.

A considerable portion of the current revenue of the department, for the years 1842 and 1843, has been absorbed in the payment of demands claimed by deputy postmasters for expenditures in previous years, by the allowance of credits therefor in the settlement of their accounts; which credits, so allowed, have been charged to the expenditures of those years, the probable amount of which is not less than $50,000.

It will at once occur to the impartial mind, that a public service so complicated and extensive as that of the General Post Office, requiring the harmonious co-operation of twenty thousand agents and officers, scattered over the vast extent of our territory, must be subjected to occasional if not vexatious interruptions, by the infidelity of some of its agents, and often by causes which no exertion can overcome or foresight avoid.

It is the duty of the head of this department, under the regulations and restrictions of law, to provide by contract for the transportation and regular delivery of the mails. This duty is performed once in four years in each of the great divisions of the Union, and from time to time, as the public exigencies require. Bonds, with schedules for the arrival and departure of every mail, are taken to the Government, so as to provide for the continuous travel of the mail in unbroken connexion, by the division of time and distance in suitable proportions. When failures in the regular delivery of the mails, arising from negligence of contractors or their agents, take place, the law is rigidly enforced by fines and deductions from their pay; and when that is found inefficient to produce a strict performance of the contract, the higher and only power given to the Postmaster General of annulling the contract is exerted.

When the extent of our territory and the condition and nature of the public highways and channels of intercommunication are considered, there is more cause for admiration of the general regularity of the system than reason of just complaint at occasional failures.

Upon two of the great mail routes, the one from Washington city to New Orleans, the other from Baltimore to Cincinnati, there have been experienced, within the last few months, irregularities in the service, which have given rise to complaints manifested through the public press. The causes of these failures have been investigated, and where they have been found to arise from neglect or inattention on the part of contractors, the proper and only corrective has been applied.

Many of the failures, however, on these two lines have been caused by obstacles wholly beyond the competency of the most vigilant contractors to overcome. The mail upon the great Southern route is transported by railroad and steamboats from Washington city to New Orleans, with the exception of the distance between Madison, in Georgia, and Mobile, in Alabama. Between these points it is transported in post coaches daily. The whole time allowed is 7 days and 8¼ hours. In winter, 24 hours more are allowed.

That portion of the route between Mobile and New Orleans, and between Charleston and Wilmington, which is performed by steamboats, is difficult—often obstructed by high winds or dense fogs. If a failure occurs, from any cause, between Washington city and Madison, Georgia, where the stage line commences, a double mail is thereby thrown upon the stage service, which is often too large to be transported in a single stage. A portion thereof is necessarily left, for the time, which produces confusion and irregularity in the delivery at Mobile and New Orleans for several successive days. From causes not unlike these, irregularities and failures have taken place on the great Western route.

The service between Baltimore and Cincinnati is on railroad to Cumberland, and a double line of daily four-horse post coaches to Cincinnati.

This mail in the fall and winter season, though it is transported from Cumberland to Wheeling over the mountains at a running speed of seven miles per hour, cannot be brought to the Ohio river before dark. Here a difficulty is presented, which, as yet, the department and the contractors have been unable to overcome. The proprietor of the ferry across the river cannot be induced to encounter the dangers of crossing the mail stages in the night. In winter, and in a great portion of the spring and fall, when the mail arrives at Wheeling after dark, and in contract time, it is detained, for the reason above, some ten or twelve hours.

It is matter of regret, that while the General Government was expending so much money in constructing that great line of communication (the Cumberland road) east and west of the Ohio river, it omitted to construct a bridge over that stream. The public mail will ever be liable to detention and interruption at this point, until such bridge shall be erected. Whether it shall be built by the same Government, and paid for out of the same fund which constructed the Cumberland road, must be left to the decision of that department of the Government which has the legislative control of the fund.

I have thought it due to the President of the United States, who cannot be indifferent to any portion of the public service, and whose attention has been arrested by the complaints to which I have alluded, to furnish him with this somewhat tedious, and, perhaps, unnecessary explanation.

I am gratified, however, in being able to state that the service, generally, is performed satisfactorily to the public, and with a punctuality, in all its departments, which does credit to the several subordinate agents concerned. Contractors have been promptly paid, as their demands have been presented, and the revenue of the department collected has been accounted for with unusual and a praiseworthy punctuality by the deputy postmasters.

Greater security has been given to the public mail by the substitution of new mail locks, of an excellent quality, within the past year.

The vigilance of the special agents, in ferreting out and bringing to justice depredators, has tended greatly to lessen, within the past year, violations of the mail.

The difficultes of effecting contracts with the railroad companies for transporting the mails, at prices in proportion to the services rendered, and within the means of the department to pay, in justice to other portions of the Union, as heretofore reported by me, still exist; and I can do no less than refer to and re-urge the views upon that subject presented to your consideration in my last annual report.

If, however, the power of contracting with these companies every four years shall be continued with the Postmaster General, I would respectfully suggest, that the acts of Congress be so far changed as to dispense with the idle ceremony and useless expense of advertising for the lowest bids on those roads, where there is and can be no competition. A contract could be as well, if not better, made by private arrangement than public advertisement.

Experience has convinced me that the law of 1836, for the reorganization of this department, requires, in many particulars, a modification, which I shall take the liberty, from time to time, in an appropriate manner, to present to the notice of the committees of the two Houses of Congress usually appointed to take charge of the legislative business of the Post Office Department.

It will appear, by a reference to the statement of the gross revenue of the department for the years 1841, 1842, and 1843, as given above, that, while the revenue of 1842 was greater than that of 1841, that of 1843 is less by $250,320 70 than the revenue of 1842.

The causes of this declension in the revenue of 1843 may be various, some referring themselves to the state of the business of the country. I am, however, fully persuaded, by facts and testimony which have been brought to my knowledge, that one cause, if not the principal one, may be ascribed to the operations of the numerous private posts, under the name of expresses, which have sprung into existence within the past few years, extending themselves over the mail routes between the principal cities and towns by which and at which the railroads pass and terminate. That these private posts are engaged in the business of transporting letters and mail matter for pay, to a great extent, is a fact which will not be seriously controverted. That the revenue of the department has been greatly reduced by their operations, no one will question who may investigate the facts.

The facts which relate to one of these cases, as reported to the department, were submitted to the late Attorney General, Mr. Legare, for his opinion of the law arising upon them. A copy of his opinion is annexed, (No. 2.) Influenced by that opinion, which was in accordance with my own judgment upon the subject, I directed a prosecution against all the offendons to be instituted in the United States court for the southern district of New York. A case *vs.* Adams & Co. was tried a few days since in that court, and resulted in the acquittal of the defendants. This acquittal, from an official report by the district attorney, a copy of which (No. 3) accompanies this report, would seem to have been caused by a defect in the existing laws. Under these laws, I am advised, this case cannot be brought before the Supreme Court for final adjudication.

The laws for the punishment of offences for transporting mail matter over post roads were enacted when the transportation of the United States mail was confined to stages, steamboats, and horses. Railroads were not then in existence in the United States, and the penal sanctions of the law are not adequate to the suppression of the practice. Railroads, whilst they are the most expensive mode of transporting the United States mail, furnish to those who choose, the easiest and cheapest mode of violating the laws prohibiting the establishment of private posts. Duty compels me to state it as my opinion, that, without further legislation upon this subject by Congress, the revenue of the department will in time be so far affected by the inroads of private expresses, that the service will either have to be reduced below the just wants of the public, or appropriations from the general Treasury will be required to meet the current expenditures of the department.

In the course of the past year I have been called upon to express my opinions upon this subject officially. These opinions have been attacked and controverted by many; and the question is distinctly presented, whether the power granted to Congress to establish post offices and post roads is plenary and exclusive.

It is contended by some, that though this power is granted to Congress, individuals and companies have a right to carry on the business of transporting letters, &c., over the post roads of the United States, and all laws which forbid them are void, and usurpations upon individual right.

Others contend that the Post Office system is an odious monopoly, and ought to be abolished. These are grave questions, urged by a portion of a powerful press, and sustained by the influence of those whose interests are involved. They are questions which, if they have not been settled by the legislative and judiciary departments of the Government, should now be settled.

The power to establish post offices and post roads was exercised by Congress, under the Articles of Confederation. From the moment Congress thus assumed the power, by the sanction of the States, no State, or citizen of a State, presumed to exercise the right. If there be any one subject, concerning the internal interests of the States and the people, which should be regarded as purely national, it is the business of transporting, by authority of law and of right, letters from one State to and through another. A uniform, equal, and harmonious system can only be conducted by a power coextensive with that system. It is absurd, therefore, to contend that the mail system can be left to the States or to individual enterprise. The members of the Convention who formed the Constitution understood this subject better. They knew that the control of this subject must be confided to a power which pervaded, *pro hac vice*, the whole sphere of its operations. Consequently, among the leading prominent grants of power by the States to Congress, is the grant over this subject, in the following words: "Congress shall have power to establish post offices and post roads."

This grant of power is found in the same clause, and is expressed in the same words and language of the grants of power to coin money, to regulate commerce, to declare war, &c. It is a grant which covers the whole ground; it is ample, full, and consequently exclusive. If doubt could exist as to the exclusiveness of this grant, that doubt must vanish upon a reference to the 10th article of the amendments to the Constitution, which declares: "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States, respectively, or to the people." The power to establish post offices and post roads is plainly and distinctly delegated to the United States. It is therefore not a power reserved to the States, respectively, or to the people.

I will not extend or elaborate an argument upon a proposition so plain, and which I conceive has been settled and adjudicated by all the departments of the Government and the people themselves.

The exclusive right to establish post offices and post roads being in the United States, Congress has the power to pass laws to protect that right. Without such laws, it is impossible to exercise the power and perform the delegated trusts, beneficially to the people. More especially cannot this be done, if Congress neglects this duty, and at the same time leaves the General Post Office to depend upon its own revenue to defray the expenses of the system.

The General Government should either protect the department against the inroads of private posts, or provide the ways and means to meet the necessary expenses of the service.

The impolicy of permitting the business of conveying letters and packets in whole or in part by private posts or expresses, so long as the Department of the Post Office is left to create by its operations its own means of support, must be apparent. These private expresses will only be found to operate upon the great and profitable thoroughfares between great commercial points, whilst the extremes are left to depend upon the operations of the United States mail, crippled and broken down for the want of means.

Between New York and Boston, between Philadelphia and Baltimore, between New York and Buffalo, individual enterprise might supply the wants of the community in the rapid and cheap transportation of letters and packets. Will the same enterprise penetrate the savannas and swamps of the South, or the wilds of the West, and daily or weekly convey to the door of the planter and the husbandman the letter of business or friendship, the intelligence of commerce and politics?

Individual enterprise may be rewarded by the payment of six cents for carrying a letter between New York and Boston; but can that same enterprise be invoked to carry a letter for twenty-five cents daily between Philadelphia and St. Louis, or from Chicago to Savannah, or from St. Augustine, Florida, to Burlington, in Iowa?

If the great thoroughfares between commercial cities are left to the operations of private posts, the extreme points, whose connexions in business and commerce tend to swell the postage collected at the cities, must suffer, or the means to reach them by the mails be furnished out of the general Treasury.

It is not wholly true that the larger cities furnish the entire surplus which is elsewhere expended. Though the returns show a large amount of postage collected at those points, much of that amount is paid by the extremes in commercial connexion with them.

Connected with this subject, in some degree, is the business of transporting newspapers, by contractors, out of the mail, over mail routes, in violation of law. When appealed to by postmasters and contractors to instruct them in their duty upon this subject, I addressed to the contractors a circular letter, in which I gave them my opinion of what the law of Congress was upon this subject. A copy of that letter (No. 4) accompanies this report. The correctness of the opinions contained in this letter has been questioned. I was conscientious in the views therein expressed, believed them to be correct, and felt it a public duty to publish them when called for by those to whom the duty of transporting the mail was confided. Though I am not distinguished by the pride of opinion in official and legal matters, I am gratified to find the views I have taken of the acts of Congress fully sustained by the official opinion of the Attorney General, to whom the subject has been referred by the President. A copy of that opinion is also annexed, (No. 5.)

There is at the present moment considerable agitation in the public mind on the subject of the reduction of postage; and it seems to be expected by some that the Postmaster General should recommend the reduction of the rates of postage. My opinions upon this subject were given to Congress, in answer to a resolution, at the last session. These opinions were necessarily hypothetical, and accompanied by a distinct annunciation that, if any considerable reduction in the rates of postage should be deemed advisable by Congress, it should be preceded by a provision to relieve the department from certain heavy annual responsibilities, and accompanied by a proper regulation and restriction of the franking privilege. Without such relief and modification of the existing laws, it was my opinion then, and it is my opinion still, that, if any considerable reduction in the rates of postage was made, the mail service would not yield a sufficiency of revenue to meet its own expenditures, upon the then and present existing scale of operations.

It is contended by many, whose opinions are entitled to respectful consideration, that a reduction of postage to a uniform and low rate would be followed by an increase of its revenue equal to the annual wants of the service on its present basis, extended from time to time as the demands of the public shall require.

I concur in the correctness and justice of the position, that the Post Office Department should not be regarded as a source of revenue to the Government; that if its receipts were greater than its expenditures the rates of postage should be reduced, and the annual surplus, if any, should not be carried into the Treasury.

It seems to have been a principle, at the foundation of the mail system of the United States, that the department should sustain itself by its own income. Of the soundness of this principle I am fully persuaded, and should regard its abandonment as impolitic at any time, particularly at the present moment, when the national income is unequal to the ordinary demands upon it.

If this principle should be abandoned, and the Post Office Department made to lean upon the Treasury for support, I should fear that *that* constant vigilance so necessary to its useful administration would be abandoned by those charged with its affairs, and a degree of wasteful expenditure and extravagance ensue, wholly inconsistent with our republican institutions.

Any reduction of the present rates of postage, by which the department is left in the possession of an income to meet its own expenditures, I shall be pleased to see made.

The example of England, in the reduction of postage to one penny, is relied upon as sufficient to justify the United States in at once making a similar reduction in the rates of postage.

Without obtruding any opinion of my own upon this subject, I have thought I would best subserve the public interest by submitting the facts which belong to the question of reduction of postage in England, and the results of that reduction, so far as they have been developed, and the facts which, it is believed, bear upon the question in this country.

It should be remembered that, at the time of the reduction of postage in England, and at the present period, the Post Office Department was regarded, as it was in fact, a source of revenue to the Crown. Its whole expense of management was paid out of the public treasury, and its whole receipts were paid into the same treasury.

In the United Kingdom, the annual transportation of the mail is about 20,000,000 of miles. In the United States, it amounts to 35,252,805 miles.

In 1838, when the subject of reduction of postage was under consideration in Parliament, the whole annual expense of management of the department was $3,353,434.

The whole amount of cost of management (expenditures) of the mail service of the United States for the year 1843 was $4,374,713 75.

The gross income of the British Post Office was $11,421,907. The gross revenue of the United States Post Office may be stated at $4,295,925 43.

The British Post Office yielded a nett revenue to the Crown, beyond its expenses, of $7,965,648. The United States Post Office receipts are about equal to its expenditures.

The cost of mail conveyance in Great Britain and Ireland is much less than in this country. The average cost for all grades, except the railway and packet service, (which I am unable to ascertain,) is scarcely five cents a mile. The coach conveyance of the mail is just five cents per mile. In the United States, the average cost, exclusive of railroad and steamboat transportation, is nearly seven and a half cents per mile. For mail conveyance in coaches, the cost is three and four-fifths cents per mile greater in the United States than in Great Britain.

The rates of postage in England, which produced this enormous revenue, were as follows:

Rates of general inland postage, on single letters, on any distance—

Not exceeding	8	miles,	2*d.*,	equal to	4	cents.
Do	15	do	4	do	8	do.
Do	20	do	5	do	10	do.
Do	30	do	6	do	12	do.
Do	50	do	7	do	14	do.
Do	80	do	8	do	16	do.
Do	120	do	9	do	18	do.
Do	170	do	10	do	20	do.
Do	230	do	11	do	22	do.
Do	300	do	12	do	24	do.
Do	400	do	13	do	26	do.
Do	500	do	14	do	28	do.

And 1 penny for each additional 100 miles, or part of 100 miles, over 300 miles.

There existed, also, what were called the London local posts. The charge upon single letters for a distance or circle of 3 miles from the London office was 2*d*., equal to 4 cents. Beyond that, and within 12 miles, 3*d*., equal to 6 cents.

Penny posts were established, for the accommodation of any town, at the discretion of the Postmaster General.

Letters from soldiers and sailors, if pre-paid, might be sent to any place in the kingdom for 1 penny.

Newspapers, if stamped, were sent through the mail free of postage. The stamp duty on each newspaper was 1*d*., equal to 2 cents; and this duty was retained in the act of 1836, in lieu of postage on newspapers. The amount derived from this duty on newspapers circulated through the mails was estimated to be $889,997 annually. Nothing is allowed to be written on the paper, not even the name of the person sending the paper, without subjecting it to triple postage.

The franking privilege of members of Parliament was limited to an ounce, and not more than 10 to be sent and 15 to be received each day. Official franks unrestricted.

Besides the postage to be derived from inland letters, postage, varying according to circumstances, and in some degree depending upon the country from and to which sent, was imposed on foreign letters, the average rate of which was 46½ cents on each letter.

Deputy postmasters are paid generally by a fixed salary from the public Treasury.

Such, substantially, was the system of the British Post Office, and its sources of revenue, in 1838.

In the United States, the Post Office Department, unlike that of England, is made to depend upon its own revenue to defray its expenditures. It does not contribute to the general Treasury.

To continue the present amount of mail service, which cannot (without injustice to the public) be reduced in any considerable degree, will require annually about the sum of $4,500,000. The annual income cannot exceed that amount for years to come, under the present system.

The reform in the British system was urged, and ultimately adopted, upon the ground that the charge for transporting a letter was out of proportion to the expense incurred. It was stated, in the report of the committee of Parliament, that the postage received was more than three times the amount of the expense incurred in transporting and delivering a letter.

It was contended, by the projector of the reform in England, that a reduction of postage to one penny, for all distances in the kingdom, would increase the number of letters to five fold; and the committee were of opinion that the revenue derived to the Crown from the Post Office would not sustain any diminution.

These opinions, and others similar, were sustained with great earnestness and ability, against the judgment of the Postmaster General and others associated with him in the department.

The committee conclude their report with this remark, in recommending the adoption of the uniform penny system of postage, "that they believe, at no distant period, it will improve the Post Office revenue itself," and "that it is the opinion of most of the witnesses, except the officers of the

Post Office Department, the adoption of it, as recommended by Mr. R. Hill, would occasion a very great increase in the number of letters posted, and a far greater increase than would be required to maintain the revenue at its present amount."

Such were the opinions and calculations upon which the system of uniform penny rates of postage was ultimately adopted.

The rates of postage, as established in England under this system, are as follows:

Letters not exceeding	1 half ounce,	1*d.*,	equal to	2	cents.
Do	do	1 ounce,	2*d.*,	4	do.
Do	do	2 ounces,	4*d.*,	8	do.
Do	do	3 ounces,	6*d.*,	12	do.

So in proportion, up to 16 ounces, beyond which no letter will be received, except Parliamentary documents.

The postage is to be pre-paid, or the letter will be rated at double postage.

Pre-payment of postage is to be made by money, or by the use of stamps.

Single stamps are obtained at the cost of 1*s.* 1½*d.* per dozen. Double stamps at 2*s.* 2*d.* per dozen.

All foreign letters are rated variously, according to the countries from which sent.

Foreign and colonial letters rated at various prices, from 6 to 66 cents the single letter.

Newspapers, printed in England and stamped, are sent free of postage.

Foreign newspapers pay postage.

Connected with this system was the abolition of the Parliamentary franking privilege.

Upon the 5th of December, 1839, the old high rates of postage were discontinued, and a uniform rate of 4*d.* substituted. That rate ceased on the 10th January, 1840, and the present uniform penny system was put in full operation.

The results of the present system in England are exhibited by the official reports of the department, as late as the 24th April, 1842, a tabular view of which is hereto annexed, (No. 6.)

The official returns for 1843 have not been received at this department, nor have I been able to procure them.

These results have not met the anticipation of the advocates of the system, in the ratio of increase in the number of letters, the expenses of management, or the amount of revenue.

I have selected the number of letters posted for a week, in each of the years 1839, 1840, 1841, and 1842, from the returns above referred to.

In a week preceding the 24th November, 1839, under the old and high rates of postage, there were posted 1,585,973 letters.

For one week, ending 22d December, 1839, when the uniform rate of 4*d.* was imposed, there were posted 2,008,687 letters.

The number of letters posted in the week preceding the 24th May, 1840, under the uniform penny rate, was 3,138,035.

The number of letters for one week preceding 20th June, 1841, was 3,773,136.

The number of letters mailed for one week preceding 24th April, 1842, was 3,929,513.

This shows an increase to less than two-and-a-half fold upon the letters posted under the old system, instead of five fold, as estimated by Mr. R. Hill and the other advocates of the system.

It is not for me to say whether three years is a sufficient length of time to ascertain the maximum increase of letters, under the operation of the penny system. It is doubtless as long a period as was contemplated by the committee, when, in their opinion, the increase of the number of letters would "improve the Post Office revenue."

The annual cost of management of the Post Office under the old system, say for the year preceding the 5th January, 1839, was - - - - - - - - -	$3,296,486
Annual cost for the year preceding 5th January, 1840 - -	3,633,595
Cost of management for the year preceding the 5th January, 1841 - - - - - - - - -	4,121,650
Cost of management for the year preceding the 5th January, 1842 - - - - - - - - -	4,503,211
Gross revenue for the year preceding the 5th January, 1839, under the old rates of postage, was - - - -	11,262,134
Gross revenue for the year preceding 5th January, 1840, under the old rates, except for one month the 4*d.* rate was in operation - - - - - - - -	11,475,662
Gross revenue for one year preceding 5th January, 1841, under the penny rate - - - - - - -	6,444,499
Gross revenue for the year preceding 5th January, 1842 -	7,178,592
The amount of nett revenue paid into the Treasury for the year preceding 5th January, 1839 - - - -	7,965,648
Do. do. preceding 5th January, 1840 - - - -	7,842,067
Do. do. do. 5th January, 1841 - - - - -	2,322,370
Do. do. do. 5th January, 1842 - - - - -	2,675,380
In this statement of nett revenue is included the sum of -	£45,156
(For the year 1839, charged to the Government for postage.)	
In 1840 - - - - - - - - -	44,278
In 1841 - - - - - - - - -	90,761
In 1842 - - - - - - - - -	113,256

There has been an increase of letters, but not to one-half the extent anticipated, and an increased charge for the management greater than was estimated.

Instead of an increase of revenue to the Crown, as was predicted by the committee, there was a loss of $5,290,268.

The system of penny postage in England, so far as revenue is concerned, has resulted in a loss of near two-thirds the revenue under the old system, and an increase of cost of management equal to 30 per cent.

These facts will serve to show that the tax, in the shape of postage, upon the English correspondence, has been lessened; that the postage upon newspapers is paid in the shape of a stamp duty, higher than the postage paid on newspapers in the United States; that the correspondence through the mail has been increased, and that the revenue derived to the Crown has been greatly lessened. And they further prove, that the income of the British Post Office is still greater than its cost of management. Two other facts should not be overlooked in the comparison of the revenue of the British Post Office, under the old and new rates of postage. The first is, that not only all foreign and colonial letters which are delivered in England, but these which pass through England, in their transit to and from other countries, are subjected to a heavy postage.

The second, that by law the transportation of letters by private conveyance, except where the carrier shall himself deliver the letter to the person addressed, is prohibited by severe penalties.

If the British Crown did not need the revenue, or if it did, and the subject was willing to be taxed in the form of stamp duty or excise equal to the reduction of the rate of postage, as more equal and less burdensome, no one will question his right, and the justice of yielding to the demand to have the postage reduced.

If the Post Office Department of the United States yielded a revenue over its expenses, or if the charge of its management was paid from the general Treasury, no one would doubt the propriety and justice of a reduction.

It is a question for Congress and the people to settle, whether they will so far change the laws of the United States concerning the Post Office Department, as to direct its expenses to be paid out of the Treasury.

The number of chargeable letters delivered, which annually pass through the Post Office of the United States, has heretofore been estimated at 24,507,994. The number of similar letters annually posted in England, under the old rates of postage, was estimated, by the committee of Parliament, at 77,500,000.

The number under the penny rate, of like letters, may be estimated at 204,334,676.

With a view to put Congress in possession of correct information upon this subject, I have directed an accurate account to be kept at each post office of the United States, during the month of October, of the number of letters under each rate of postage, the number of free letters and by what official franked, the number of newspapers, pamphlets, &c. These returns are not quite complete. I hope to have them ready by the 1st of January, to be furnished to Congress, if required.

The questions connected with this subject, it occurs to me, which it will be the duty of the representatives of the people to settle, are, whether the present amount of mail service is greater than the country requires? If not greater, can it be performed at less expense? Whether at the same or less expense, shall it be paid out of the Treasury, or by the postage on mail matter?

If Congress shall enter upon the question of reduction of postage, upon the principle avowed by the advocates of the British reform, viz: of preserving, if not improving, the amount of revenue, and shall require the Post Office Department to maintain itself, the information, which I hope to have ready by the 1st of January, of the number of letters posted, will be important.

By a comparison between the business and population and extent of territory of the two Governments, and a comparison between the number of letters posted in both countries, under the respective rates, an estimate of the probable increase of posted letters in this country, upon a pro rata reduction of postage, may be made, and that rate of postage may be ascertained which will give the amount required to defray the expenses of the mail system of the United States.

If, however, it shall the pleasure of Congress to follow the example of the British Government, by placing the expenditures of the department as an annual charge upon the public Treasury, and by bringing to the aid of that Treasury whatever of postage may be collected, the report of the number of letters which now pass through the mail can be of little consequence.

This change of system will simplify the operations of the service. The amount required for the service of each current year, in the opinion of each Congress, will be appropriated from the Treasury. The postage collected will be paid into the Treasury. The department, thus protected and sustained, will continue the sphere of its operations, limited only by the amount appropriated.

I have deemed it a duty to present to your view (entertaining a hope that you will submit it to Congress) this synopsis of facts, digested from the best sources within my possession, and leave the question of reduction of postage without any recommendation of mine, to be decided by that department of the Government to which the people have wisely delegated the power.

If Congress should not determine to make the reduction of postage to the extent indicated by the views and published opinions of those who have agitated the subject, I would respectfully recommend, as I have done on former occasions, that the present rates of postage be so changed as to correspond with the coins of the United States.

There is a large class of printed matter, such as handbills, the prospectus of a newspaper, prices current, the drawings of lotteries, proof sheets, &c., now charged with letter postage, which ought not to pay higher rates than newspapers and pamphlets. A just discrimination between newspapers, as to size or weight, should be made in the imposition of postage.

The franking privilege, if not abolished altogether, should in some way be restricted, and its abuse checked.

There are other modifications of the existing laws, which will no doubt present themselves to the consideration of Congress, whose enactments, whatever they may be, will be administered, so far as that duty shall be devolved on me, in the same spirit in which they may be passed, with a view singly to promote the intentions of Congress, and to advance and extend the usefulness of this department to every section of the country.

I am, sir, with great respect, yours,

C. A. WICKLIFFE.

To the PRESIDENT OF THE UNITED STATES.

Post Office Department,
Contract Office, November 4, 1843.

Sir: From the foregoing table the following results appear:

That the cost of mail service, including the agencies incident to the railroad and steamboat routes, was less for the last than the preceding year by $134,499, whilst the transportation throughout the year was greater by 416,814 miles:

That the average cost of transporting the mail was $8\frac{3}{10}$ cents per mile; on the horse routes, $5\frac{2}{5}$ cents; on the coach routes, $8\frac{4}{5}$; and on the railroad and steamboat routes, $12\frac{4}{5}$ cents:

That the railroad and steamboat mail service constitutes about 16 per cent. of the whole service in the extent of annual transportation, and over 24 per cent. in cost; the coach transportation, 52 per cent. of service and 54 per cent. of cost; the horse conveyance, about 31 per cent. of service and 20 per cent. of cost.

The changes in the service during the year ending June 30, 1843, may be expressed in totals as follows:

Curtailments ordered - - - - - - -	$132,253
Saving effected under the new contracts, as finally adjusted in the Northwestern and Southwestern sections, which went into operation on 1st July, 1842 - - - - - -	100,831
	233,084
Additional and new service ordered - - - - -	98,585
Reduction - - - - - - - - -	134,499

It is to be observed that the above amounts, and all amounts given in this report, are stated by the entire year, and not from the dates when the allowance or the curtailment was made. They do not embrace the deductions made for failures of service, nor, on the other hand, the allowances of the month's extra pay where service is discontinued. The books of the Auditor only can give the precise amounts, as modified by the dates and the other circumstances alluded to. It may be generally assumed that the sum, whether of addition or reduction, will appear less on the Auditor's books than in this estimate of it by annual amounts.

The last annual lettings of mail contracts were for the section composed of Virginia, North Carolina, South Carólina, Georgia, and Florida; and the service, under the new contracts then awarded, commenced with the current contract year. There have also been let to contract numerous routes throughout the United States, created by a recent act of Congress, the service on which has gone into operation since 1st July, 1843. This service has not yet been fully adjusted, but an examination into the first quarter's operation shows—

That the additional and new service, since 1st July last, ($28,108 of which is for the new routes created by Congress,) indicates an additional expense for the year, of - - - - - - -		$41,300
That the service in the Southern section has been re-let at less than the cost of last year, by about - -	$7,500	
And the orders of curtailments amount to - -	21,883	
		29,383

showing thus far an annual increase of expense of transportation for the present over the last year, of $11,917.

The advance in the price of railroad and steamboat transportation in the Southern section has been so great as nearly to absorb the entire saving effected upon the coach and horse routes at the last letting. The cost of railroad and steamboat service since the 1st of July 1843, is $62,838 more than during the last year; $58,838 of this increase arises upon the railroad and steamboat routes of the Southern section alone. A detailed statement of this species of service in the United States, as it stands under the arrangements of the current year, is subjoined.

Agreeably to your request, I append the schedules of departure and arrival of the mail on the two great routes from Washington to New Orleans, and from Washington to Cincinnati.

Respectfully submitted.
S. R. HOBBIE,
First Assistant Postmaster General.

Hon. C. A. Wickliffe,
Postmaster General.

States.	Nos. of routes.	Termini.	Distance.	Total distance in each State.	No. of weekly trips.	Annual cost.	Annual cost in each State.	Remarks.
			Miles.	Miles.				
Maine - -	86	Portland to Portsmouth -	50	50	12	$5,000 00	$5,000 00	
New Hampshire	201	Concord to Lowell - -	49	49	12	2,958 00	2,958 00	
Massachusetts -	401	Boston to Portsmouth - -	54	-	13	10,068 50	-	Embracing side supply.
	402	Boston to Dover - -	67	-	6	5,969 00	-	Embracing side supply, and extending 7 miles further, to the junction with the Portsmouth railroad, without additional pay.
	404	Boston to Lowell - -	26	-	18	3,600 00		
	411	Boston to Worcester - -	45	-	13	8,500 00		
	418	Boston to Providence - -	43 7-16	-	18	7,006 00	-	Embracing side supply.
	443	Worcester to Springfield -	55	-	13	8,250 00		
	481	Mansfield to Taunton - -	12	-	12	1,500 00		
	486	Taunton to New Bedford -	21	-	12	2,100 00		
	518	Springfield to Albany - -	100	423 7-16	6	10,000 00	56,993 50	
Rhode Island -	801 pt.	Providence to Stonington -	48	48	6	4,800 00	*4,800 00	With right to six weekly trips more.
Connecticut -	651	Hartford to New Haven -	36	-	14	6,319 00		
	684	Norwich to Worcester - -	59	-	6	4,000 00		
	702	Bridgeport to West Stockbridge	96	191	6	3,945 00	14,264 00	
New York -	818	Jamaica to Huntington -	27	-	3	180 00	-	Brooklyn to Jamaica is under contract for coach service. The department has no official evidence whether service is performed on railroad or not.
	874	Hudson to Pittsfield - -	42	-	3	2,000 00	-	Embracing branches to Lebanon Springs, daily, part of the year; and to West Stockbridge.
	912	Albany to Schenectady -	16	-	13—8 months 7—4 do	3,200 00		

	935	Troy to Schenectady - -	14	-	6	212 00	-	The daily-mail service between Ithaca and Owego, 29½ miles, contracted to coach conveyance, is understood to be performed on railroad during the summer season.
	969	Schenectady to Utica - -	78	-	13—8 months 7—4 do	15,600 00		
	971	Schenectady to Saratoga Springs	22	-	7	1,325 00		
	1004	Utica to Syracuse - -	53	-	13—8 months 7—4 do	9,275 00		
	1038	Syracuse to Auburn - -	26	-	Do	4,275 00		
	1082 1119	Auburn to Rochester - -	78	-	Do	13,650 00	-	Embracing supply of side offices.
	1165	Rochester to Batavia - -	33	-	Do	4,950 00		
	1165 pt.	Batavia to Attica - -	10	-	Do	-	-	Amount not yet finally adjusted.
	1173	Attica to Buffalo - -	30	-	Do	3,800 00	-	Embracing supply of side offices.
	1191	Lockport to Lewiston - -	20	-	7	1,000 00		
	1194 pt.	Buffalo to Youngstown -	35	-	7	1,100 00	-	Residue two-horse-coach service, and remainder of compensation $750.
	1229	Junction railroad to Skaneateles	5	-	7	300 00		
	1250 pt.	Piermont to Goshen - -	45	-	6	1,286 00		
		Extended to South Middletown	7	541	6	*200 00	62,353 00	
New Jersey -	1301	New York to New Brunswick -	36	-	14	11,788 00		
	1301 *a*	New Brunswick to Philadelphia	54	-	14	20,878 00	-	Railroad service is performed between Elizabethtown and Somerville, about 26 miles, six times a week, which is embraced in a coach contract.
	1365	Trenton to Philadelphia -	30	-	14			
	1302	New York to Paterson -	17	-	12	1,385 00		
	1314	Newark to Morristown -	18	155	12	1,585 00	35,636 00	Extension to New York included.
Pennsylvania -	1401	Philadelphia to Columbia -	82	-	14	16,400 00		
	1406	Philadelphia to Pottsville -	98	-	7	6,875 00		
	1416	Philadelphia to Westchester -	33	-	12	429 00		
	1475	Lancaster to Chambersburg -	85	-	7	12,000 00	-	Contractors run fourteen times a week, and, it is said, apply to this route more pay than $12,000, taken from their other routes.
	1514	Hagerstown to Chambersburg -	20	-	6	1,114 00		
	1616	Summit to Johnstown - -	23	-	3	250 00		
	1710	Williamsport to Ralston -	25	366	6	1,286 00	38,354 00	

* Estimated proportion.

STATEMENT—Continued.

States.	Nos. of routes.	Termini.	Distance.	Total distance in each State.	No. of weekly trips.	Annual cost.	Annual cost in each State.	Remarks.
			Miles.	Miles.				
Maryland -	1901	Baltimore to Philadelphia -	99	-	13—8 months 7—4 do	30,600 00	-	Part of the trips a portion of the year in steamboats.
	1902	Baltimore to Washington -	40	-	14 ½ trip 8 m'ths	12,500 00		
	1903	Baltimore to Cumberland -	179	-	7	43,225 00		
	1907	Baltimore to Columbia - -	71	-	6	6,246 00		
	1910	Junction of Baltimore railroad to Annapolis - - -	28	417	6	1,800 00	$94,371 00	
Ohio - -	2182	Monroeville to Sandusky -	15	15	3	400 00	400 00	There is railroad service from Sandusky, south, to Belleview, three times a week, 15 miles, and still further, but the distance is unknown to the department, which is covered by a coach contract.
Virginia -	2420	Junction to Gordonsville -	50	-	7	4,500 00	-	Contract not executed.
	2422	Richmond to Aquia - -	75	-	7	19,500 00	-	Contract not executed. Embraces side supply and special service.
	2424	Richmond to Petersburg . -	24½	-	7	5,818 50	-	Contract not executed.
	2436	Petersburg to City Point -	12	-	7	500 00		
	2439	Petersburg to Weldon - -	64	-	7	15,200 00	-	Contract not executed.
	2453	Norfolk to Weldon - -	80	-	7	8,000 00	-	Contract not executed.
	2519	Winchester to Harper's Ferry -	82	337½	6	3,200 00	56,718 50	
North Carolina	2801	Raleigh to Gaston - -	87	-	7	8,700 00		
	2832 pt.	Weldon to Wilmington -	160	247	7	*37,500 00	46,200 00	
South Carolina	3104	Columbia to Branchville -	68	-	7	8,187 50		
	3125	Charleston to Augusta - -	139	207	7	33,012 50	41,200 00	
Georgia -	3251	Augusta to Madison - -	106	-	7	25,525 00	-	Contract not executed.
		With a branch to Warrenton -	3½	-	7			

	3256	Savannah to Macon - -	192	-	6	20,580 00		
	3283	Macon to Griffin - -	58	-	6	5,000 00	-	Contract not executed. The company having the privilege of omitting the Sunday service, unless seven-times-a-week service is performed on No. 3256.
	3298	Union Point to Athens -	41	400⅓	6	3,600 00	54,705 00	
Florida -	3510	Tallahassee to Port Leon -	26	26	3	900 00	900 00	
Michigan -	3602	Detroit to Jackson - -	79	-	6	5,000,00	-	There is railroad service three times a week, 32 miles and back, between Madison and Scipio, in Indiana, embraced in a coach contract.
	3604	Detroit to Pontiac - -	25	-	6	1,500 00		
	3616	Toledo to Adrian - -	33	137	6	1,700 00	8,200 00	Embracing side supply.
Kentucky -	-	- - - -	-	-	-	-	-	There is railroad service from Lexington to Frankfort, 26 miles and back, daily, covered by a coach contract.
Alabama -	5418	Decatur to Tuscumbia - -	44	44	6	3,000 00	3,000 00	
Mississippi -	5605	Jackson to Vicksburg - -	53	-	6	5,300 00		
	5612	Bolton's Depot to Raymond -	7	60	6	399 00	5,699 00	
				3714-7-16	-	-	531,752 00	

*Estimated for the railroad part of the route. Contract not executed.

Statement of steamboat mail service, as in operation on the 4th November, 1843.

Massachusetts -	505	New Bedford to Nantucket -	65	65	6	$3,000	$3,000	From 25th November to 25th March, service is by packet from from Wood's Hole to Nantucket.
New York -	801 pt.	New York to Stonington -	125	-	6	10,700	-	In winter three times a week, with other service, to make the whole equivalent to six times a week the year through.
	802	New York to Norwich -	142	-	6	4,239		
	803	New York to New Haven -	80	-	6	8,000	-	With right to send mails to Hartford, when run by the proprietor of this line.
	807	New York to Tompkinsville -	8	-	6	156		

STATEMENT—Continued.

States.	No. of routes.	Termini.	Distance.	Total distance in each State.	No. of weekly trips.	Annual cost.	Annual cost in each State.	Remarks.
			Miles.	Miles.				
New York -	810	New York to Troy - -	159	–	Daily, & part of 6 ad'l.	$15,000	–	Steamboat service on Crooked Lake, about 25 miles and back, daily, is embraced in a coach contract, No. 1113.
	950	Whitehall to St. John's -	150	–	6	1,500		
	1103 *a*	Salubria to Geneva - -	38	–	6	2,139	–	Steamboat service on Chautauque Lake, about 20 miles and back, 6 times a week, is also under coach contract, No. 1214.
	1250 pt.	New York to Piermont -	25	727	6	714	$42,448	
Ohio -	2060	Buffalo, New York, to Detroit, Michigan.	385	–	7	10,000	–	For season of navigation in 1843.
	2002	Wheeling to Steubenville -	23	–	6	1,322	–	Half pay of the route. During suspension of navigation, service is in four-horse coaches.
		Steubenville to Wellsville -	21	429	6—4 months 3—8 do.	–	11,322	
Virginia -	2401	Washington to Aquia - -	54	–	7	12,752		
	2432	Richmond to Norfolk - -	150	–	3	1,200	–	Twice a week during January and February.
	2451	Norfolk to Baltimore - -	200	404	6	7,157	21,109	Contract not executed.
North Carolina	2822 pt.	Wilmington to Charleston -	170	–	7	37,500	–	Estimated for steamboat part of route.
	2856	Franklin Depot to Plymouth -	103	273	3	3,500	41,000	
Florida -	3517	Chattahoochee to Appalachicola	150	–	2	5,500	–	Once a week during 4 months of the year.
	3528	Savannah to Pilatka - -	300	450	1	5,500	11,000	Contract not executed.
Michigan -	3677	St. Joseph to Chicago - -	69	69	6	2,900	2,900	
Illinois -	4184	Peoria to Ottowa -	86	86	6	4,234	4,234	Part of a coach and steamboat route.

Missouri	-	St. Louis to New Orleans	1,250	1,250	3	6,240	6,240	This is paid by the trip—$20 each way per trip. There is steamboat service twice a week between St. Louis and Keokuck, in Iowa, temporarily performed at present by way of experiment.
Kentucky	4834	Cincinnati to Louisville	132	-	7	5,000		
	4801	Louisville to New Orleans	1,448	1,580	6	23,920	28,920	Service is engaged by the trip.
Alabama	5532	Mobile to New Orleans	164	164	7	70,000	70,000	There is steamboat service from Mobile to Stockton, 36 miles and back, daily, covered by a coach contract.
Arkansas	5806 pt.	Rock Roe to White River	100	100	3	10,000	10,000	Part of a steamboat and coach route.
Louisiana	5934	St. Francisville to New Orleans	150	-	2	9,000	-	There is authority given to engage steamboat service twice to Alexandria, and once a week to Shreveport, at specific amounts for the trip, at certain seasons of the year.
	5902	New Orleans to Covington	45	195	3	3,600	12,600	
				5,792	-	-	264,773	

RECAPITULATION.

Description of service.	Miles.	Annual cost.
Railroad service	3,714 7-16	$531,752
Steamboat service	5,792	264,773
Total	9,506 7-16	796,525

S. R. HOBBIE,
First Assistant Postmaster General.

Schedule of departures and arrivals.

GREAT SOUTHERN ROUTE, DAILY.

Mail is to leave	Mail is to arrive at	Miles.	Remarks.
Going trip.			
Washington, D. C., at 5½, a. m.	Aquia Creek by 9½, a. m.*	54	Steamboat.
Aquia Creek, Va., at 9½, a. m.	Richmond by 3½, p. m.* -	75	Railroad.
Richmond at 4, p. m. - -	Petersburg by 6, p. m.* -	24½	Railroad.
Petersburg at 6½, p. m. -	Weldon by ½, a. m., next day*	64	Railroad.
Weldon, N. C., at 1, a. m. -	Charleston by 8½, a. m., next day* - -	380	Steamboat and railroad.
Charleston, S. C., at 9, a. m. -	Augusta by 7, p. m. -	139	Railroad.
Augusta, Ga., at 7½, p. m. -	Madison by 5, a. m., next day	196	Railroad.
Madison at 5½, a. m. - -	Columbus by 5½, a. m., next day - - -	141	Four-horse coaches.
Columbus at 7½, a. m. -	Montgomery by 11, p. m. -	88	Four-horse coaches.
Montgomery, Ala., at 11, p. m.	Mobile by ½, p. m., second day after - -	193	Four-horse coaches.
Mobile at 1, p. m. - -	New Orleans by 2, p. m., next day - - -	164	Steamboats.
	7 days 8½ hours - -	1,378½	
Return trip.			
New Orleans at 11, a. m. -	Mobile by 12, m., next day	-	In the winter, 24 hours more time is allowed between Madison and Mobile, in both directions.
Mobile at 1, p. m. - -	Montgomery by 1, a. m., second day after.		
Montgomery at 1, a. m. -	Columbus by 4½, p. m.		
Columbus at 5, p. m. - -	Madison by 5, p. m., next day.		
Madison at 6, p. m. - -	Augusta by 3½, a. m., next day.		
Augusta at 5, a. m. - -	Charleston by 3, p. m.		
Charleston at 6½, p. m. -	Weldon by 9¼, p. m., next day.*		
Weldon at 9½ p. m. - -	Petersburg by 3½, a. m., next day.*		
Petersburg, at 3¾, a. m. -	Richmond by 5¾, a. m.*		
Richmond at 6, a. m. - -	Aquia Creek by 11¼, a. m.*		
Aquia Creek at 12, m. - -	Washington by 4, p. m.* 7 days and 5 hours.		

GREAT WESTERN ROUTE, DAILY.

Going trip.			
Washington, D. C., at 6. a. m.	Cumberland by 9, p. m. -	201	Railroad.
Cumberland, Md., at 10, p. m. -	Wheeling by 7, p. m., next day - - -	133	Four-horse coaches.
Wheeling, Va., at 6, a. m., next day - . . - -	Zanesville by 4½, p. m. -	76	Four-horse coaches.
Zanesville, Ohio, at 5¾, p. m. -	Columbus by 1¼, a. m., next day - - -	54	Four-horse coaches.
Columbus at 3½, a. m. - -	Springfield by 9¼, a. m. -	43	Four-horse coaches.
Springfield at 10¼, a. m. -	Cincinnati by ¾, a. m., next day - - -	72	Four-horse coaches.
	3 days and 18¾ hours -	579	

* The schedules marked thus (*) are fixed by order. Contracts not yet executed.

SCHEDULE—Continued.

GREAT WESTERN ROUTE, DAILY.

Mail is to leave	Mail is to arrive at	Miles.	Remarks.
Return trip.			
Cincinnati at 11, a. m -	Springfield by 1½, a. m., next day.	-	On account of great bulk and weight of mail, a second line is run, under assurance that it shall arrive at Wheeling in time to make connexions. The mail for Pittsburg, and beyond, is also sent over this route as far as Washington, Pa.
Springfield at 2½, a. m.	Columbus by 8¼, a. m.		
Columbus at 10½, a. m.	Zanesville by 5½, p. m.		
Zanesville at 7, p. m. -	Wheeling by 5¼, a. m., next day.		
Wheeling at 8, a. m. -	Cumberland by 5, a. m., next day.		
Cumberland at 8, a. m.	Washington by 11½, a. m., next day.		
	4 days and ½ hour.		

NOTE.—Between 1st May and 1st November, the mail is to cross the Ohio immediately after its arrival and distribution at Wheeling, and the whole trip is to be performed in 3 days and 7¼ hours.

S. R. HOBBIE, *First Asst. P. M. G.*

CONTRACT OFFICE, *November* 4, 1843.

No. 2.

OFFICE OF THE ATTORNEY GENERAL,
March 22, 1843.

SIR: Your letter of the 18th instant submits to me the following case:

"Adams & Co., of New York and Boston, constitute a firm, engaged in what has assumed the name of a private express between New York and Boston, and between those points and other post towns. They are openly and avowedly the carriers of what they call packages, besides bundles of goods, samples, merchandise, &c., of light freight. They were seen, on the 15th of December, 1842, to take letters sufficient to amount to three dollars, which amount they received for transporting them to New York Generally, these letters, packages, &c., are conveyed in the train of cars and the steamboats, which carry the mail always over mail roads or roads parallel thereto. These men and others are in the daily habit of doing this to such a degree as to threaten bankruptcy to the department.

"The evidence of this fact was furnished the district attorney of New York, accompanied by a request that he would institute prosecutions. He replies as in paper No. 1.

"If the facts be as stated, your official opinion is required, whether these men have not incurred the penalty imposed by the acts of Congress of 1825 and 1827."

OPINION.

I have looked into the acts of 1825 and 1827, and, although they are certainly not drawn with all the precision and explicitness desirable in penal legislation, I have no doubt but that the case you have stated comes within the spirit and intent of the former, and constitutes an offence which it is impossible that you should suffer to pass without an effort to punish and arrest it.

The district attorney must be instructed to proceed, under the act of 1825, against all the parties concerned in this systematic fraud upon the revenue of the country. Should the courts unexpectedly rule, that what is so clearly within the meaning of the law is not defined with the accuracy necessary in such cases, it will be your duty to bring the matter immediately to the view of Congress, in order that a complete remedy for so crying an evil be promptly adopted. But I am of opinion, on a full examination of the act of 1825, that no further legislation is needed, in order to punish and prevent the class of offences in question.

It is plain, from sections 6, 15, 17, and 19, that it is the duty of every owner and manager of a packet ship, &c., either in the foreign or coasting trade, to deliver to the postmaster of the respective ports *all* letters, except those addressed to consignees and owners, &c.

It is unlawful, and a fraud upon the revenue, for any common carrier to be the bearer of any letters, except those of his employers, whether with or without recompense, but *a fortiori* in the latter case. By section 19, no stage, &c., no packet boat, or other vessel, which regularly plies on a water declared to be a post road, shall convey letters, except such as relate to some part of the cargo. For the violation of this provision, the owner of the carriage or vessel shall incur a penalty of fifty dollars; and the person who has charge of such vessel or carriage may be prosecuted under this section, and the property in his charge levied on and sold, in satisfaction of the penalty and costs of suit; "provided, that it shall be lawful for any one to send letters by special messenger."

This provision is loosely worded, but it admits of no fair judicial construction but this. The only case excepted out of the provisions of this law is, that of a person sending letters by a messenger not generally engaged in such a service.

A messenger regularly going between two points, and taking any letters trusted to him for a fee, is not a special, but a general messenger, and, in every sense of the word, a common carrier. To except such a case would be to make the law repugnant to itself. Suppose the owner or carrier of a boat to set up such an express, and every body would see that it were a palpable evasion of the law. But if any body else may do it, why should the owner or master alone be prohibited?

As to the vessel, &c., it can make no difference whether she carry the mail or no. The act is, in this respect, as comprehensive as possible; except that, if the master or owner of a steamboat which carried the mail for an adequate compensation from Government should take part in or connive at such a fraud upon the Post Office, he would be doubly guilty in law and morals.

As to the commercial partnership engaged in this violation of the law, I confess I was inclined to agree with Mr. Hoffman, until the 24th section of the act of 1825 was brought to my view. The words of that section appear to me directly to embrace their case.

With regard to the principles of interpretation applicable to laws intended to protect the revenue against fraud, I ought perhaps to add, that they are not subjected to the narrow rules formerly applied in the construction of penal statutes. In England, the very opposite principle is adopted. (*Edw.*, 289; *the Adam.*) In our courts, such acts receive the same construction that would be put upon any other remedial legislation; that is, a fair, sensible, practical interpretation, without reference to any merely technical rule in favor of the accused.

The question is—is it not plainly unlawful to set up a private post for hire on a post road, defrauding the Post Office of its dues, and making it a mere burden on the honest classes of the community, to the advantage of interlopers and their customers?

It is manifest, that either the Post Office monopoly ought to be abolished for all, or the laws that protect it from invasion be indiscriminately enforced against all.

I have the honor to be, sir, your obedient servant,
H. S. LEGARE.

Hon. C. A. Wickliffe,
Postmaster General.

The papers are returned.

No. 3.

U. S. Attorney's Office,
New York, November 16, 1843.

Sir: I have the honor to enclose you a report of the case of the United States *versus* Adams & Co. The trial lasted two days.

Through the activity and attention of General Eaton, we were able to present the facts to the jury much more strongly than I anticipated, for almost all our proof had to be eviscerated from reluctant witnesses.

Upon the facts, I think we would have obtained a verdict; for the jury, in their written verdict, say that they find for the defendants, "because they believe that there is no law to convict them."

The construction given to the law by the court forbids any hope of future success under it against the defendants, either as principals for conveying letters by their agents, or as aiding and procuring the boat to do so, unless done with the knowledge and consent of the owners of such boat.

I have formally excepted to the decision of the court, so that I may have the right to prepare a bill of exceptions, and bring a writ of error, if you shall think it advisable so to do.

Judge Thompson is too unwell to hold the next circuit, which commences on the last Monday of this month; and it will therefore be held by Judge Betts. The bills of exceptions could not, therefore, be argued before the spring circuit, which commences on the first Monday of April, 1844.

The judge's charge, as set forth in my report, is, I believe, substantially correct, omitting, of course, much that he said by way of illustration.

I also enclose two reports of the "Journal of Commerce" and the "Express." These reports, although inaccurate in many particulars, may serve to show the general view taken by the court of the law.

I am, very respectfully, your obedient servant,
O. HOFFMAN, *U. S. Attorney.*

Hon. Charles A. Wickliffe,
Postmaster General, &c.

letters; that the defendants charged upon moneys sent a commission according to its amount; that they were therefore aware that money was sent; that it had been proved by their own witness (Fisher) that money had been sent by him in as small an amount as $10; that such money was enclosed in a paper or letter, giving information, to the person to whom it was directed and delivered, of the amount enclosed; that this was a letter within the meaning of the law; that the carrying these packages containing letters, and letters containing money, was so common and notorious, that the jury would believe that the acts of their agents were done with their knowledge and consent; and, if so, that they were then liable, notwithstanding the directions to their agents, which may or may not have been sincere.

3d. The district attorney contended that the 19th section of the act of 1825 declared that no stage or vessel should convey letters on any post road, or any water declared to be a post road, &c.; that the offence prohibited was the *vessel's conveying letters;* that if the offence were committed by the vessel or stage, that there were two classes of persons liable to a penalty for such offence, viz: the owner and captain of such vessel, or, under the 24th section, the persons who procured, advised, or assisted in the perpetration by the *vessel of the act forbidden;* that the provision in the 24th section, that the procurers or aiders shall be liable to the same penalties as the persons are subject to who actually perpetrated the act, was a mere reference to such liability as a standard of punishment, and did not imply that the owner or captain must be liable before the aider or procurer could be made liable to the penalty; that if the vessel conveyed letters, although without the knowledge or consent of the captain or owner, such vessel *perpetrated the act forbidden by the law;* and that all who procured her to perpetrate this act, or aided or assisted her in doing so, were liable to the penalty; that it had been proved that the "New Haven" did convey letters on a post route, and *perpetrate the act* forbidden by law, and that Adams & Co. did procure, aid, and assist her in so doing.

It was also submitted by the district attorney, whether the running their expresses as a general business was not setting up a horse or foot post, within the spirit of the 3d section of the act of 1827, as the declaration contained counts also under this section.

The court then delivered the following charge:

Charge to the jury, delivered by Judge Betts, in the case of the United States vs. *Adams & Co.*

This case presents one of those questions which courts of justice are frequently required to solve—whether a state of facts or condition of things, not known at the passage of a penal law, is to be governed by the provisions of such law.

The acts relied upon to sustain the prosecution were passed in 1825 and 1827, and the defendants engaged in the business complained of about two years since. A similar branch of business had been publicly carried on by the parties about six years before.

Some suggestions were made as to the sufficiency of the pleadings, in charging the defendants to be accessories to the offence, under the 24th section of the act of 1825, and in not averring directly that they violated the statutes as principal offenders. But it is unnecessary to notice this in-

The defendants then called George B. Fisher, who testified that he was in the employ of the defendants, as the conductor of their express; that Stevens, who had received the letters mentioned by the witnesses for the plaintiffs, acted as conductor for one day only, on account of witness's illness; that he was the book-keeper for Adams & Co.; that the conductors were instructed by Adams & Co. not to take letters, and that at the office they refused to receive letters to be carried by their express.

On being cross examined, the witness testified that he had examined the books of Adams & Co., and that no entry was made therein of the money received by Stevens for taking the letters; and that, if he had accounted with the defendants for the money so received, an entry would have been made in their books; the small packages were put in a valise, which was generally filled. Witness, when acting as such conductor, has carried money, contained in a sealed envelope, and delivered it to the person to whom it was directed, and been told by the person who received it, after he had read the writing, that it was all right, and has taken a receipt therefor; that he recollects carrying sums as small as ten dollars, and receiving a receipt therefor; that Adams & Co. charged a commission on money sent, according to the amount.

It was also proved by Cornelius Vanderbilt, the owner, and J. K. Dustan, the captain of the steamboat New York, that they carried the crates of Adams & Co. by contract; that they were acquainted with the agents of Adams & Co., and had never seen any of them carry letters, nor seen letters delivered to them; and that they had no knowledge that Adams & Co. made a business of conveying letters, or that they carried letters.

The defendants then offered testimony to show the great public benefit received by these expresses, &c.

To rebut this testimony, it was proved, by General Eaton, Colonel Graham, (the postmaster in New York,) Mr. Greene, (the postmaster of Boston,) and other witnesses connected with the Post Office, that these express lines had materially affected the revenue of the Post Office Department.

The testimony having closed, the counsel for the defendants contended:

1st. That the plaintiffs must prove that the letters delivered to the agent were actually conveyed through to their place of destination.

2d. That, if Adams & Co. had given directions to their agents not to receive or convey letters, they were not liable for the illegal acts of such agents, unless such acts were specifically and actually proved to have been done with their knowledge or consent.

3d. That, upon the proof, the case did not fall within the provisions of the act; that, in order to sustain this penalty against the defendants, it must be shown that the steamboat was openly engaged in conveying letters, with the knowledge and consent of the captain or owners, so as to make the captain or owners liable; and, *then*, that the defendants procured, aided, or assisted the captain or owners so to do, and co-operated with the owners or captain for such purpose.

Upon the part of the Government it was contended:

1st. That it was not necessary to prove that the letters were actually carried through; that, if they were delivered to and received for that purpose, the law would imply that the conductor who so received them performed the duty he had undertaken.

2d. That it was proved that these packages almost always contained tional carrying of letters, as such. The notorious practice of packet boats or other vessels keeping letter boxes, or receiving letters otherwise, to carry from port to port, and like arrangements in stages and other vehicles on or parallel with post roads, were the mischiefs undoubtedly in view of Congress, because the terms of the act naturally apply to such a state of things or method of transportation, and are unusual and inapt to describe or forbid letters being carried, when concealed in trunks, boxes, or packages.

Nor could such language be with propriety understood as applying to the case of letters carried by individuals, on board the boat or vehicle, about their persons.

If Congress has the power to prohibit individuals carrying letters on post routes, on their persons or in their trunks, or other packages, they have not in these statutes attempted to exercise such power, and courts of law cannot, in executing these acts, extend them beyond their plain provisions.

The defendants are not sued for carrying letters, by themselves or agents, about their persons, or for enclosing or concealing them in packages, and thus carrying them; nor, as before stated, could they be, as there is nothing in the statute authorizing such an action; but these methods of transportation have been given in evidence in support of the charge that they in that way procured, advised, or assisted the steamboat, or other vehicles, in conveying letters.

[The court further charged the jury, that if the agents (Fisher & Stevens) carried letters contrary to the directions of the defendants, the defendants are not liable, inasmuch as the agents acted beyond the scope of their authority.]

There is no proof showing that the defendants have been any way concerned in setting up a foot or horse post for the conveyance of letters. This branch of the charge is accordingly unsupported. To constitute this offence, it must be made to appear that such post was set up to convey letters as a business; and the taking of letters by individuals on foot or on horseback, in their casual passages over mail routes, is no violation of the act of 1827. And in this case no evidence is produced that the defendants carried letters *themselves*, or by their agents, on foot or on horseback, at all.

The jury must accordingly acquit the defendants, unless they find, upon the testimony, that the steamboat, or other vehicle, conveyed letters within the meaning of the law as expounded by the court, and that the defendants procured or advised the illegal act to be done.

No. 4.

Post Office Department, *September* 1, 1843.

Sir: The many complaints and numerous official reports, made by the agents of the department and postmasters, of the continued violation of the Post Office laws by persons carrying, for pay, letters, newspapers, and mail matter, over and upon mail roads, and often in the vehicle employed by the department to transport the mail, and the reduction in the revenue, owing in no small degree, to the existence and increase of this abuse, have suggested the propriety of addressing you this letter. It is hoped, when your attention is called to the law, and the nature of your obligation to the department, that you will exercise the power you have, not only to protect the department against the inroads upon its rights, but to give a vigilant attention to the fulfilment of your engagements as a contractor for carrying the mail.

The power to establish a post office and to carry a mail is granted, by the Constitution, to the Congress of the United States. This grant of power is full, and consequently exclusive. No State can establish a post office or run a mail line, neither can any citizen do so.

Congress, by the act of 1825, section 19, has expressly declared "that no stage or other vehicle which regularly performs trips on a post road, or on a road parallel to it, shall convey letters; nor shall any packet boat, or other vessel, which regularly plies on a water declared to be a post road," convey letters, "except such as relate to some part of the cargo. For a violation of this provision, the owner of the carriage, or other vehicle or vessel, shall incur the penalty of fifty dollars," &c.

The 3d section of the act of 1827 declares "that no person, other than the Postmaster General or his authorized agents, shall set up any foot or horse post, for the conveyance of letters and *packets*, upon any post road which is or may be established as such by law." The person so offending shall, upon conviction, be fined fifty dollars.

The 30th section of the act of 1825 provides that "the Postmaster General, in any contract he may enter into for the conveyance of the mail, may authorize the person with whom such contract is to be made to carry newspapers, magazines, and pamphlets, other than those conveyed in the mail: *Provided*, That no preference shall be given to the publisher of one newspaper over that of another, in the same place."

The 24th section of the same act provides that any person "who shall procure and advise or assist in the doing or perpetration of any of the *acts* or crimes by this act forbidden, shall be subject to the same penalties and punishments as the persons are subject to who shall actually do or perpetrate any of the said acts or crimes," &c.

These are the provisions of law which pertain to the subject; from which it clearly appears that it is unlawful for any person to run a post, no matter that it be called an "express" or "agency," either by land by horse or foot, in stage or railroad car, or by water in a steamboat or other vessel, for the conveyance of mail matter. 2d. That it is equally unlawful, whether such person shall run his own vehicle, steamboat, railroad car, or shall obtain the privilege to run the post or express in the stage, car, or steamboat of another, more especially if that other is a mail contractor. The person who is engaged in this business—he who aids, assists, or, employs such person, the owner of the vehicle, are all equally guilty of a violation of law.

It is no part of my business to defend and justify the propriety of the acts of Congress made to protect the revenue of the department. If such task, however, were imposed upon me, as an Executive officer, it would not be one of difficult performance.

In vain would the Government hope to derive a revenue for its support from an impost upon foreign merchandise without laws to prohibit and punish smuggling. The smuggler receives no sympathy when he is detected, because he is engaged in cheating the Government out of its just due, and defrauding the honest importer.

It has been the policy of the United States to place the Post Office Department upon its own resources—to require it to raise, by postage, the means to defray its expenses. To do this, a rate of postage upon letters and newspapers has been fixed by law, and the Postmaster General is required to see this law executed. If violated, like him at the head of the customs, he is bound to have prosecuted its violators. In what differs the turpitude of the act (except in amount) of him who cheats, by violating the revenue law, the Government out of its just dues, by smuggling, and of him who cheats the same Government out of its postage by a wilful violation of the Post Office law? In the one case, the honest importer is defrauded; in the other, he who faithfully pays his postage and obeys the law is injured, the department deprived of its revenue, and unable to extend its useful operations with the growing wants of the community.

In aid of these general remarks, and beside calling to your notice the laws above referred to, I beg leave to refer you to the stipulations of your bond to this department, by which it will be seen that you have covenanted not to transport any person or persons engaged in carrying mail matter out of the mail.

When complaints have been made to some contractors of a violation of law in the above particulars, but little heed has been given, and the answer most generally returned is, that they do not *know* of such violation. A little attention and wholesome instruction to your agents would enable you to detect these violators.

That these agents or expresses carry matter, daily, which, by law, should go in the mail, I presume there can exist no doubt. Under what terms they pass and repass over your road is unknown to me. You have a right to inquire. May I not hope for your united effort to protect the revenue of the department?

A practice has grown up of sending newspapers in the cars and steamboats employed to transport the mail. This is a right claimed by some editors; others have addressed letters to their subscribers, and invited them to receive their papers in this way, in preference to the mail. This is a subject which has given rise to no small portion of abusive denunciation of the head of this department.

This right is claimed for the cheap, or penny papers, as they are called. The laws of Congress have made no distinction between newspapers. The postage is imposed upon all newspapers, without regard to their *size or price*, and all alike must share the same fate in the mail.

It is true the act of 1825 has authorized the Postmaster General, *in making contracts for the transportation of the mail*, to authorize the contractor, under certain conditions, to carry newspapers out of the mail. Without such privilege, no such right exists, and the contractor who carries them violates his contract with the department.

This privilege, when granted, should constitute an ingredient in the contract.

That such a privilege, upon many of the railroad and steamboat routes, and indeed upon other routes, would be advantageous alike to the publisher and the public, is conceded; but it must be granted upon application and specific terms. If, therefore, any publisher wishes to convey newspapers over your line, out of the mail, he should made application to you, state the name and number of papers, daily, or otherwise; and upon your report and application to this department, the terms upon which it can be done will be made known; which terms will be equally applicable to all papers.

You are requested to report to this department, when known to you or your agent, monthly, the name and number of newspapers which are daily transported over your line by your agents, out of the mail, and between what places.

I am, respectfully, yours,
C. A. WICKLIFFE,
Postmaster General.

No. 5.

Attorney General's Office, *November* 13, 1843.

Sir: I have carefully examined and considered the circular issued by the Postmaster General, under date of the 1st of September, 1843, addressed to the contractors for the transportation of the mail, and the acts of Congress to which reference is therein made, and am of opinion, upon the questions submitted to me—

1st. That, under the laws of the United States, it is not competent for any stage or other vehicle which regularly performs trips on a post road, or on a road parallel to such post road, to convey letters; nor does such authority exist to warrant such conveyance to be made by any packet boat or other vessel which regularly plies on a water declared to be a post road, with the exception of letters that relate to the cargo, or some part thereof, transported by such packet boat or other vessel.

2d. That it is not competent to any person or persons, other than the Postmaster General or his authorized agents, to set up any foot or horse post, for the conveyance of any letters or packets, upon any post road established by law.

3d. That the term "packets," used in the acts of Congress and in the last foregoing proposition, includes *newspapers*, for the conveyance of which, therefore, no foot or horse post can be legally employed, except by the Postmaster General and his agents, upon any post road established by law. And

4th. That contractors employed in the transportation of the mail have no authority to carry any newspapers, magazines, and pamphlets, other than in the mail, except by the authority of the Postmaster General, and in pursuance of a contract made for that purpose.

The first proposition I have stated substantially in the terms of the 19th section of the act of the 3d of March, 1825, entitled "An act to reduce into one the several acts establishing and regulating the Post Office Department."

The second is sustained by the clear and unequivocal language of the 3d section of the act of the 2d of March, 1827, entitled "An act amendatory of the act regulating the Post Office Department."

The third affirms that the term "packets," used in the act last referred to, includes newspapers; and this will be rendered apparent, apart from the meaning of the term, by a collation of the provisions of the act of 1827 with those of pre-existing laws upon the same subject, but which are not now in force.

The 14th section of the act of the 20th February, 1792, enacts "that if any person, other than the Postmaster General or his deputies, or persons by them employed, shall take up, receive, order, despatch, convey, carry, or deliver, any letter or letters, *packet or packets, other than newspapers,* for hire or reward, or shall be concerned in setting up any foot or horse post, wagon, or other carriage, by or in which any letter or packet shall be carried for hire, on any established post road, or any packet or other vessel or boat, or any conveyance whatever, whereby the revenue of the General Post Office may be injured, any person so offending shall forfeit for every such offence the sum of two hundred dollars."

The same provision substantially is found in the 14th section of the act of the 8th of May, 1794, which prohibited the establishment upon private authority of "any foot or horse post, stage, wagon, or other stage carriage, on any established post road, or any packet boat or other vessel to ply regularly between one place and another, between which a regular communication by water should be established by the United States, and the conveyance thereby of any letter or *packet, other than newspapers,* magazines, or pamphlets," &c.

The act of the 2d of March, 1799, contains the same prohibition, re-enacted by its 12th section, in almost the same terms, and excepting from the operation of the prohibitory clause, as to letters or packets, "*newspapers,* magazines, or pamphlets."

So also by the 16th section of the act of the 30th April, 1810, the like prohibition is imposed upon the establishment of private foot or horse posts, &c., for the conveyance upon the routes designated of letters or packets, "other than *newspapers,* magazines, or pamphlets."

As the law stood, therefore, when the act of the 3d of March, 1825, was passed, it is quite clear that, whilst "no private foot or horse post, stage, wagon, or other stage carriage, or sleigh, on any established post road, or from one post town to another post town, or on any road adjacent or parallel to an established post road, or any packet boat or other vessel, to ply regularly from one place to another, between which a regular communication should have been established by the United States, for the conveyance of *letters,*" could have been set up, "*newspapers, magazines,* or *pamphlets*" might, in virtue of the exception in the laws referred to, have been so conveyed; and as the act of 1825 made no provision whatever upon the subject of private posts, and repealed all pre-existing laws "*for the* establishment and regulation of the General Post Office," the right to establish such private posts then existed without restriction.

The act of 1827, however, revived the prohibition to which I have referred, *without* the exception of "*newspapers, magazines,* or *pamphlets,*" contained in previous laws, extending its restrictive operation to all "foot or horse posts for the conveyance of letters or packets (all packets) upon any post road which is or may be established by law." The 19th section of the act of 1825 had inhibited the conveyance of letters by stages or other vehicles, or by packets or other vessels, under private authority; and the additional enactment of 1827 extends the inhibition to foot and horse posts upon post roads, and embraces within its interdict the conveyance of letters and packets, omitting the exception of "*newspapers, magazines,* or *pamphlets.*"

The fourth proposition refers to the restrictions imposed on contractors, who are forbidden to carry *newspapers,* magazines, or pamphlets, other than in the mail, except by the authority of the Postmaster General, and in pursuance of contracts made for that purpose. This is specially provided by the 30th section of the act of 1825, which in this respect is but a transcript of the 22d section of the act of 1792, the 22d section of the act of 1794, and the 27th section of the act of 1810.

The restraints and prohibitions to which I have referred are qualified, however, by the 19th section of the act of 1825, as they were by all the previous laws, by the salutary proviso, "*that it shall be lawful for any one to send letters by special messenger.*"

In thus briefly responding to the inquiries propounded by you, I have cautiously abstained from the expression of any opinion as to the policy of the enactments for the regulation of the Post Office Department. I have sought only to ascertain what those laws are, leaving it to the proper authorities to amend them, if believed by them to be defective. Until changed by those competent thus to deal with them, I need not say that it is the duty of the Executive to enforce all their provisions.

I have the honor to be, very respectfully, sir, your obedient servant,

JOHN NELSON.

To the PRESIDENT.

No. 6.

A comparative statement of the number of letters (including franks during the existence of the franking privilege) delivered in the United Kingdom in one week of each calendar month, beginning with November, 1839, *and ending with the present time.*

Weeks ending	England and Wales.				Total Ireland.	Total Scotland.	Total United Kingdom.
	Country offices.	London, inland, foreign, and ship.	London district post.	Total England and Wales.			
November 24, 1839 - -	764,938	229,292	258,747	1,252,977	179,931	153,065	1,585,973
December 22, 1839 - -	963,616	279,457	340,693	1,583,766	225,889	199,032	2,008,687
January, 1840 - - -	Not ascertained.						
February 23, 1840 - -	1,658,002	431,298	406,476	2,495,776	349,928	353,983	3,199,637
March 22, 1840 - - -	1,607,431	416,887	386,689	2,411,007	321,163	337,326	3,069,496
April 26, 1840* - - -	1,505,609	410,270	390,989	2,306,868	328,074	319,924	2,954,866
May 24, 1840 - - -	1,588,809	449,333	418,926	2,457,068	338,407	342,560	3,138,035
June 21, 1840 - - -	1,629,123	454,376	441,848	2,525,347	343,761	352,098	3,221,206
July 19, 1840 - - -	1,674,410	452,448	400,753	2,527,611	338,495	356,817	3,222,923
August 23, 1840 - - -	1,746,257	461,689	343,347	2,551,293	345,831	369,436	3,266,560
September 20, 1840 - -	1,811,213	450,871	340,232	2,602,316	350,318	366,419	3,319,053
October 25, 1840 - - -	1,821,711	472,802	387,848	2,682,361	369,297	366,121	3,417,779
November 22, 1840 - -	1,805,325	492,574	387,282	2,685,181	385,672	385,262	3,456,115
December 20, 1840 - -	1,782,579	491,264	405,153	2,678,996	381,306	375,024	3,435,326
January 24, 1841 - - -	1,929,661	519,625	467,940	2,917,226	386,555	380,242	3,684,023
February 21, 1841† - -	2,133,197	547,621	504,147	3,184,965	460,380	444,819	4,090,164
March 21, 1841 - - -	1,950,501	531,960	447,766	2,930,227	389,877	401,351	3,721,455
April 25, 1841 - - -	1,899,485	511,064	454,601	2,866,150	389,989	389,568	3,644,707
May 23, 1841 - - -	1,908,188	546,170	452,864	2,907,222	391,332	400,581	3,699,135
June 20, 1841 - - -	1,911,452	540,099	506,911	2,958,462	396,374	418,300	3,773,136
July 25, 1841 - - -	2,001,546	522,290	437,471	2,961,307	383,549	401,152	3,746,008
Septust 22, 1841 - - -	1,994,305	531,773	384,606	2,910,584	377,141	410,224	3,697,949
Augember 19, 1841 - -	1,999,372	532,075	378,244	2,909,691	389,606	396,323	3,695,620

October 24, 1841 - - -	2,041,335	551,711	404,271	2,997,317	404,689	407,118	3,809,124
November 21, 1841 - -	2,029,370	564,481	435,602	3,029,453	403,421	413,248	3,846,122
December 19, 1841 - -	2,062,129	554,990	458,459	3,075,578	425,681	437,496	3,938,755
January 23, 1842 - - -	2,165,323	567,636	481,206	3,214,165	421,273	423,245	4,058,683
February 20, 1842† - -	2,385,607	581,571	522,634	3,489,812	486,909	471,763	4,448,484
March 20, 1842 - - -	2,100,176	560,433	448,195	3,108,804	403,714	451,768	3,964,286
April 24, 1842 - - -	2,061,679	579,332	455,279	3,096,290	428,782	404,441	3,929,513

* Easter week.

† Week of the valentines.

W. L. MABERLY, *Secretary*.

General Post Office, *May* 21, 1842.

An account showing the gross and nett post office revenue, and the cost of management, for the United Kingdom, for each of the years ending 5th January, 1839, 1840, 1841, *and* 1842 *excluding from the account, whether of gross revenue or cost of management, any advances that may have been made by the English to the Irish post office, and advances to the money order office.*

Year ending January 5.	Gross revenue.*	Cost of management.†	Nett revenue.	Postage charged on the Government departments.	Nett revenue, exclusive of charges on the Government departments.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1839 -	2,346,278 00 9½	686,768 03 6¾	1,659,509 17 2¾	45,156 00 11	1,614,353 16 03¾
840‡ -	2,390,763 10 1½	756,999 07 4	1,633,764 02 9½	44,277 13 04	1,589,486 09 05½
1841 -	1,342,604 05 2	858,677 00 5¼	483,927 04 8¾	90,761 03 02	393,166 01 06¾
1842 -	1,495,540 09 0¾	938,168 19 7½	557,371 09 5¼	113,255 15 10	444,115 13 07¼

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* Namely, the gross receipts after deducting the returns for "refused letters," &c.

† Including all payments out of the revenue, in its progress to the exchequer, except advances to the money order office.

‡ This year includes one month of the four-penny rate.

C. T. COURT, *Accountant General.*

General Post Office,
May 23, 1842.

No. 18.

REPORT ON THE CULTIVATION OF HEMP.

Report of the superintendent of the experiment upon the culture and manufacture of hemp, from the time of planting until the hemp is fitted for the brake; containing, also, remarks upon a method for the introduction of the culture and manufacture of hemp among the hemp growers in the United States, so as to produce a sufficiently strong article for naval purposes.

The Hon. A. P. Upshur, late Secretary of the Navy, evinced great interest in the introduction of a method of cultivating and manufacturing hemp as done in Russia, where the best hemp is obtained for naval uses.

Such a desire having been made known to me, I framed a short and condensed memorial, setting forth the method of cultivating and manufacturing hemp as done in Russia, my native country.

The said memorial was submitted to the Hon. Secretary of the Navy by Col. G. L. Thompson, chief engineer of the United States navy, who also expressed great interest therein.

Near the expiration of the last session of Congress, a printed report, containing 200 pages, was received from Odessa, of an examination into the culture and manufacture of hemp in all of the hemp-growing countries of Europe, by Mr. Butowsky, an officer of the Russian Government; said report was printed at St. Petersburg, by order of the Minister of Finances, in the year 1842.

The report being in the Russian language, I offered myself as translator to the Hon. A. P. Upshur; who consented, with the remark that Con- had ordered a translation, and that a bill had been brought before the Senate for an appropriation to meet the expense, but Congress adjourned without passing the bill. I therefore undertook the translation, with the hope that Congress would, at their next session, pay me for my work, which is nearly completed, and only awaits the necessary corrections previously to going to press.

From the circumstances mentioned, the Hon. A. P. Upshur determined to make an experiment upon a small scale, for the purpose of ascertaining the possibility of obtaining an article similar in quality to that of Russia. I had the honor to be intrusted with the superintendence, and am still zealously engaged in completing the experiment.

Besides being a native of Riga, in Russia, where the best hemp is cultivated and exported, I have enjoyed the additional advantage of practical experience in the culture of this article for many years, upon my plantation in the valley of the Wabash, in the State of Indiana; added to which, the information obtained from the translation, now before me, of the latest reports of the principal hemp-growing countries of Europe, enables me to contrast the different cultures, so as to draw a result highly beneficial to the United States, and, if practically pursued, must end in the production of an article equally strong, if not stronger than the Russian hemp.

The mode of cultivating hemp in Russia is not materially different from that of other countries, as may be seen by comparing the memorial made by me with the translation of the report of Mr. Butowsky; nor has the process received much alteration for centuries. Improvements have daily progressed in every branch of business, while this most important culture remains almost entirely neglected, and still shackled by prejudice and old custom, the worst enemies of husbandry.

Other means, even in this enlightened country, must be resorted to, than printed instructions, which are read by few, and seldom practised. It is Government, and it alone, that can remove the obstacles that now clog this most important branch of farming; and if pursued in a proper way, so as to hold out inducements, the effect will be soon visible; nor will the time be far distant when, instead of paying millions of dollars to foreign countries for supplies necessary for the navy, it will be found to be an article of considerable export.

The several monthly reports, submitted previously, contain all the details of the experiment, and shall be comprised in a general report to the committee that may be appointed, in time to investigate the comparative strength of Russian hemp, and that produced by the experiment, together with the operation of the newly constructed hemp brake.

Even in the most approved mode of curing water-rotted hemp, as practised until now, it will unavoidably occur that some of the fibres of a weaker stalk will begin to decompose before the stronger are ready to be removed out of the fluid. To remedy this, the hemp is generally removed from the water before the time the process has been completely finished; then the stalks are spread upon the ground, exposed to the weather until it appears that the woody parts separate with ease from the fibres; but even with the best attention, it is impossible to prevent some of the fibres from decaying before the period of gathering has arrived. This latter part of the process is a part of dew rotting.

The process of dew rotting, especially when the hemp stalks are piled together in large cones, and suffered to remain so all winter, (a common practice among the hemp growers both of Indiana and Kentucky,) should be entirely abandoned, as it gives the product a very dark color, weakens it, and renders it unfit for naval purposes.

In an experiment made upon my farm about twelve years ago, I found if the hemp stalks were pulled in proper time, the seed and buds cut off, and set aside in a dry airy place until perfectly dried, then heated artificially not above 212° Fahrenheit, that though when exposeed to the brake the woody parts did not give way so readily as the water-rotted hemp, yet, after working repeatedly, the fibres became sufficiently clean; the hemp so obtained had a yellowish green color, soft, and resembling silk, being much superior in strength to the hemp cured in the ordinary way—for the reason, that the fibres are not weakened by decomposition, but retain all the strength that nature has bestowed upon them. Some small samples, prepared in the above-mentioned manner, have been submited to the department, accompanying the monthly reports.

The new hemp brake, now being finished, is solely calculated to break green hemp. Should it answer the expectation and purpose, it would be a matter of the greatest importance and consideration, as it would entirely remove the necessity of resorting to the most disagreeable and troublesome process of water rotting. The farmer could then pull his hemp with ease and at his leisure, without being compelled to have it all pulled in one day, as in the case of water rotted.

Twenty or more hands are necessary to gather an acre of hemp stalks—a number much too large, as I know from experience, to be readily obtained in a free State; and this is the strongest reason why the farmer in a free State is compelled to confine himself to a very small portion of his farm for hemp-growing purposes; whereas, if the mode of manufacture of the green hemp were generally introduced, the free would enjoy equally with the slave State both in quality and quantity of their hemp.

It is well known that tobacco yields a large profit when cultivated upon a rich soil, but the number of hands and the attention it requires forever place it out of the power of a free State to cultivate it to any extent. Hemp yields a still greater profit from an equal portion of ground, and, if treated in the process mentioned with regard to green hemp, there would be less trouble than in the cultivation of potatoes, and the product would be superior in strength to the best Russian hemp.

An important remark is necessary to be made in the culture of hemp. There are two species, viz: male and female; the former being entirely distinct from the latter—one bearing only flowers and extended branches at the top; the other, seed gathered closely together in buds. The former, or male, is fit for pulling about six weeks before the female, and affords the softest and finest fibres, well adapted for the spinning wheel. The male should be pulled as soon as the blossoms and lower leaves drop; the female, when the lower leaves have fallen, and the greatest part of the seed ripened. (All of the seed of hemp do not ripen at the same time; consequently, a part of the seed will still be green when the hemp is gathered.)

The seed should be separated from the stalks, together with the buds that enclose the seed, and placed in a shady and airy place to dry. After this, the seed should be separated from the buds—a process attended with some difficulty, as it cannot be thrashed out, like other grain, without injuring it for further use. It should be rubbed. For the purpose of procuring the seed without injury, I have invented a very simple machine, which answers admirably, and intend to submit it to the committee.

The time of pulling the male hemp is generally neglected by all the hemp growers in the United States, (to my knowledge.) By such neglect, the farmer not only loses nearly one-fourth of the whole product of his best hemp, but, by suffering it to remain standing perfectly dry among the green hemp, when exposed together to the process of either dew or water rotting, it becomes decomposed before the green hemp is finished, and also spoils the color and corrupts the quality of the female hemp.

It may appear difficult to gather all the male hemp, in a large field, from the female plants. This is very easily remedied, by ploughing furrows at a parallel distance of eight feet, which will act as a guide, and suffer the male to be gathered without molestation or injury to the other kind.

The experiment of cultivating and manufacturing hemp was commenced in April, on a piece or lot of ground (No. 9, in square No. 20) in the city of Washington, belonging to Captain W. Easby, containing seven thousand nine hundred and sixty-three square feet. It was not so well calculated for hemp culture as it first appeared to be, but, as the season was so much advanced, no choice was left. The seed sprouted badly, as the weather was directly opposite to that which it should have been to produce a good crop.

The plants near the fence grew to the height of six feet; while those in the centre of the lot only attained that of three or four feet; so that the crop can by no means be pronounced fair. Still, if it can be proved that the fibres obtained from short and weakly plants should be equally strong, if not stronger than the best Russian hemp, then it will be evident that the treatment, as practised in the experiment, is to be preferred to any other.

My view was to find a solvent to separate the resinous substance from the fibre, without resorting to immersion or dew or water rotting. The following trials have been successively made, namely: 1st, a solution of sulphate of soda; 2d, a solution of carbonate of soda; 3d, a solution of sulphate of iron; 4th, some cured with tan; some in a liquid that underwent fermentation. All of these experiments produced hemp which differed but little from that cured in the ordinary way, with the exception of the color. It appeared, further, that the hemp cured in a solution of the sulphate of soda appeared much stronger than any before mentioned; but this fact shall be ascertained in time, by a trial of the comparative strength between those named and the Russian hemp, before the committee.

The samples of hemp submitted to the Navy Department are of the following descriptions, viz:

1st. Green male hemp.
2d. Green female hemp.
3d. Water-rotted male hemp.
4th. Water-rotted female hemp.
5th. Dew-rotted hemp.
6th. Hemp cured in solution of sulphate ot soda.
7th. Hemp cured in solution of carbonate of soda.
8th. Hemp cured in solution of sulphate of iron.
9th. Different samples cured in tan.
10th. Cured in a fermenting fluid.
11th. A sample of male hemp which was left on the field, and pulled together with the female. This latter sample will show how weak the fibres of the male are, when left on the field longer than they should be. This neglect is exceedingly common, as before mentioned.

Should this sample be exposed together with the female hemp, which at that time was perfectly green, to dew or water rotting, it would only be with the greatest attention cured, and would injure the color and quality of the whole, in addition to a loss of one-fourth.

The different solutions did not answer the expectation in dissolving the resinous matter. A curious circumstance was discovered in the application of alcohol, which readily dissolved the resinous matter; but, after evaporating the alcohol, and making a second application of it, it was found to be insoluble, though it dissolved easily in water—altering the matter, however, from resin to gum. Further experiments will no doubt lead to satisfactory results. Such a discovery may prove useful in the manufacture of hemp.

Government, in her wise decision, has now made the first step towards the encouragement of this very important branch of husbandry, by appointing agents in Kentucky and Missouri to investigate hemp that may be fit for naval service. It saves (as it has been remarked) the farmer a disappointment when he enters the market; but this is the limit. Should his produce be rejected, he returns home without being informed as to the mode of improving his culture. Therefore, if I am at liberty, I would respectfully suggest that the agent should not only be the examiner of hemp for Government, but that he should take a warm interest in the culture of this useful product himself, and be fully competent to instruct the farmer, so that he would be enabled either to avoid or correct his mode of cultivating hemp, in a language to be comprehended by the countryman. The method of holding out the prospect of a better price next season would operate more advantageously than many printed works and systems. Further, each agent should have in cultivation some few acres every year, to show practically a systematic operation, where any man who wished to learn the cultivation in all of its branches might be admitted, and assist in working the same. Slaves might also be sent by their masters for a season, for instruction, free of expense, with the exception of their board. It appears to me that this mode of operation would soon produce a new era in the manufacture of hemp all over the United States; and it may, knowing the enterprising spirit of the people, in a short time not only produce a supply for home consumption, but leave a large surplus for export.

I would further suggest, that in every State, advantageously situated for this species of produce, there should be an agent appointed, as before mentioned. The expense for such an establishment would, in a short time, be amply repaid, as has been the case in the cotton and sugar plantations, which date their existence from the time Government held out inducements; and there is no doubt that such will be the case with hemp manufacture.

It is known by the report of the Russian officer, Mr. Butowsky, which I am translating, that Italy produces the finest and best hemp, for linen and sail cloth, in Europe.

Italy is between 40 and 45 degrees latitude, being a peninsula. Florida is between 20 and 30 degrees latitude—also a peninsula. It is also known that the temperature in the same latitude is much lower in the United States than in Europe, and that the temperature of Italy and Florida is very much the same. But we have much richer land in Florida than they have in Italy, except near the volcanoes; therefore, better hemp could be produced more advantageously in the former place.

Should some of the numerous swamps in Florida be drained, (which might be easily done,) no better soil could be found. Then, if the Government should hold out proper inducements, immigrants would flock to that country, and in a short time make her to this country what Italy now is to Europe.

The before-mentioned translation from the Russian language, upon the subject of hemp culture, shall be finished and corrected in a few weeks, ready for the press.

I would respectfully ask leave to append to the translation such remarks as I shall deem, in accordance with my own experience, most expedient for the use of the United States.

All of which is respectfully submitted, by your most obedient servant,

PETER VON SCHMIDT,
Superintendent of the experiment upon the culture and manufacture of hemp.

Hon. David Henshaw,
Secretary of the Navy.

THE

MEANS OF IMPROVING
THE
MANAGEMENT, CULTIVATION, AND FABRICATION
OF
HEMP.

COLLECTED BY A. BUTOWSKY,

And printed by order of the Minister of the Treasury, at the Topographical Department, St. Petersburg, 1842.

TRANSLATED FROM THE RUSSIAN, BY ORDER OF THE CONGRESS OF THE UNITED STATES,

BY PETER VON SCHMIDT, *Civil Engineer*.

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THE MEANS OF IMPROVING

THE

CULTIVATION AND FABRICATION OF HEMP,

IN ALL ITS BRANCHES.

PREFACE.

The business of cultivating hemp, and converting it into threads and linen, employs a considerable number of hands, amongst the farmers as well as the capitalists, in Russia.

This branch of industry, through the gift of Providence, has spread through all nations; but especially in Russia has the success in the culture of hemp been great and important, including therein the provinces of Aneprom, of the Upper Danube, and of Chopra, as well as Chernigof, Pultava, Kursky, Charkof, Orlow, and Tombof. The produce of these parts of Russia amounts to more than 240,000,000 pounds of hemp annually; of which more than one-half is exported to foreign countries, and the remainder is manufactured into cables and ropes for home consumption. Thread and various kinds of linen are likewise manufactured, and constitute an important article of trade.

The provinces of Russia which are celebrated for their very extensive culture and manufacture of hemp, are Orel, Bransk, Balchof, Fatosh, Staradub, Kosneshe, and others more remote, wherefrom the raw material can conveniently be transported, either by land or water. Also, from Serpuchof, Kaluga, Koselsk, Weasneky, Meurom, Kostroma, Rschef, St. Petersburg, and Perm.

The hemp exports, from the ports of Riga and St. Petersburg merely, prove sufficiently the importance of the business. More than one-half of the hemp raised in Russia is exported, and nine-tenths of the hemp thus exported remains in Europe. In a commercial point of view, Russia ranks indisputably the first among the hemp-growing countries, the moderate price of the hemp facilitating its export. The following shows the amount exported in the course of one year:

Raw hemp - -	- 34,000,000	rubles banco	=	$6,800,000
Manufactured hemp -	- 9,000,000	" "	=	1,800,000
Hemp seed and oil -	- 3,000,000	" "	=	600,000
Total - -	- 46,000,000	rubles banco	=	9,200,000

The value and importance of this product is visible; providing our native country with all necessities, while it is ornamental.

By comparison, it is satisfactorily shown that, even with the slight industry used, Russia derives great profits from the culture of hemp. But, should useful improvements be admitted and adopted, the business would be more regularly carried on, with a diminution of expense in the management of, and an improvement in, the article itself.

The Russians were not only the first who introduced hemp into the European markets, but its superior quality was admitted in all foreign countries.

The successful cultivation of hemp in Russia may be accounted for—first, in the mode of cultivating; next, in the climate; and, finally, in the peculiarity of the soil of the different provinces. It would be desirable to introduce some improvements in the culture of hemp, according to circumstances, to influence the practice and to improve the material.

Moreover, attention should be paid to the preparation and selection of the ground for the purpose of planting hemp, and the immersion and breaking of it *on the spot*, as well as its fabrication, viz: beating and cleaning. In short, the material should be prepared ready for transportation.

Up to the present time, all the hemp in Russia having been prepared solely by manual labor, the question arises: Why cannot we direct our attention to the fabrication of it by the aid of machinery, such as invented for the very purpose in England and France? Why should Russia, the principal and native country of hemp in Europe, not share the advantages of those important improvements?

The different processes of weaving, which thus far have been done by hand, at least should be performed by machinery. The Russian sail cloth, as well as "Raventuch" and Flemish linen manufactured of hemp, is every where appreciated and highly prized: why, until at present, did not we hasten to manufacture fine hemp linen? Those new improvements referred to, dispensing with manual labor, would supply us, for that purpose, with fine and tender web.

It is true that the manufacture of cables and ropes in Russia has attained a high degree of perfection; but even that fact should not prevent the manufacturers to watch for improvements.

The industry of the people should unhesitatingly be diverted by encouragement from the old usages and prejudices to new experiments; for it would be more useful to imitate foreigners than to continue in error.

The idea of a plan to save manual labor originated in consequence of the last results obtained in France; but this proves, by no means, that the industry in cultivating hemp is derived from it. On the contrary, it shows that the profits from the produce in France cannot be compared with those of Russia; besides there being some other exceptions deserving to be mentioned.

Next to Russia, in Europe, France cultivates and produces the most hemp, amounting annually to 100,000,000 of pounds; but this quantity is not sufficient to supply the demands for home consumption in France, and they are obliged to import from Russia and Italy about 7,400,000 pounds more, one-half of which is used in the navy. The necessity of improving the culture of hemp in France is more to be ascribed to the neglect in the cultivation of the soil than to any want of land or resources. Not long since they took the necessary measures for increasing industry, which will soon enable them to do away with the importation of foreign hemp for the use of their navy; for they offered premiums to a considerable extent for the successful cultivation of hemp.

This and many other measures distinguish France in a praiseworthy manner, by endeavoring to advance the power and the means of strengthening and facilitating the culture of hemp. There is good reason to expect that very soon France will be provided for home consumption, and then will commence exporting hemp to foreign countries for a market—particularly to England, to take the place of the so highly celebrated Russian hemp.

Among others, Italy continues to provide the foreign markets with hemp, which is generally preferred by the manufacturers, on account of its great perfection; but the Russian hemp keeps the lead of the Italian in regard to price, as it is every where admitted to be better qualified for the manufacture of cables; it possessing the property of imbibing easier, and retaining better, the required grease.

England, too, has already commenced, by way of experiment, to transplant hemp into her colonies, threatening us with new establishments for cultivating hemp, with the view of abstracting the trade from our country. These circumstances are sufficiently important to arouse our hemp cultivators. More than one-half of the quantity of hemp for export could here still be manufactured. Already experienced loss should tend to have a good effect and consequences, although the danger may be far distant; the necessary demand for hemp at home, in Russia, is sufficient to ensure the consumption of all home produce. To test this experience, we ought always to be prepared for unforeseen accidents; first, to provide our own country with hemp, and then, if circumstances permit, to export the remainder to foreign countries.

At the same time, it would be desirable that our manufacturers should take advantage of the abundance and cheapness of the raw material for their establishments in the interior of Russia. Prolific and attentive experience already shows the necessity thereof, when we consider that the exports of hemp, manufactured in various ways, annually amount to one million eight hundred thousand dollars.

To neglect the cultivation of hemp, surely, would prove neglecting an inexhaustible source of riches. Suppose it should at present be managed under more substantial arrangements, (although it is already profitable,) would not we avoid unpleasant sensations by hearing of the advance of other nations? Therefore, inducements for industry should be held out by Government, so that it would be undertaken and supported. The farmer, the manufacturer, and the merchant, might conduct this important branch of industry in perfect harmony, seeing the advantage thereof secured to themselves, and knowing how to take the first rank as hemp cultivators and manufacturers in Europe.

If, in the numerous directions given in the contents of this manuscript, any explanations in regard to the collected circumstances should be desired, we request to communicate such observations to the department of manufacture and inland trade, where, at all times, the same will be readily received, and advice and explanation be rendered.

FIRST DIVISION.

The preparation of hemp.

The preparation of hemp is influenced by various circumstances; but, in consequence of its value, it ranks in the first class of materials of its kind. According to the perfection and good success of the farmer performing the different processes of preparing hemp, he will produce more or less of the material fit for the different purposes for which it is intended, notwithstanding a change should be effected in the cultivation of hemp, for it is still in its infancy. The principal object of the farmer is to dispose of his hemp at the highest price, and to procure the greatest custom by way of encouraging himself. A skilful manufacturer should be able to determine the degree of perfection to which the farmer has to advance the hemp, so as to be fit to carry out his own object. When the hemp has to undergo separation, it should be done with particular care and attention. Next, the selection of soil fit for the culture of hemp; and, lastly, the harvest. In connexion with the latter, there are some remarks which are imbodied in the description of the different operations.

Selection of soil.

Hemp can be cultivated in all kinds of soil, (such as clay, lime, sand, &c.,) provided it be covered by a sufficient quantity of black loam, (*homus terreau*,) and there be no obstacle to the access of atmospheric influence; furthermore, the ground being not too fresh, however deep, and constantly moist. By water-deposited soil, flat shores of rivers and lakes, (beyond the reach of floods,) so situated as to be tilled by the plough or spade, are the spots most favorable to the culture of hemp. It prospers, however, not only on the shores of rivers and lakes, but also in valleys; and on small patches in the woods, or any place where the soil is suitable and rich enough, it may be cultivated successfully, if there is a sufficient access of fresh air.

Dry land, exposed to the rays of the sun, and a poor soil, composed of rubbish, and with but little moisture, are not fit for the cultivation of hemp. Without doubt, a sufficient quantity of land, fit for the culture of hemp, may be found, which would realize the farmer's expectation, without the expense of enriching such land; in flat and open situations, the land which is enclosed by fences, hills, or woods, for the reason of its being protected against heavy winds.

Hemp is cultivated in France, but to the greatest extent in the provinces of Brittany and Anjou. Those extensive countries are favored, in the first instance, by the desired temperate climate near the sea, which is also found in the extensive provinces of Charchof and Tshernigof, (in Russia,) where the best quality of hemp is obtained; secondly, by valleys and fields, the soil of which is a mixture of clay and sand, covered by a thick layer of black loam; and, in the third instance, by fields so situated as to be surrounded by hills, which protect the growing plant against wind and storms. In the Dauphiné (France) the same aspect is presented; and between Grenoble and Verona, where the most hemp is raised, the soil is composed of water-deposited soil, surrounded by high rock or stone fences.

Up to the present time, the botanists seem to have neglected to investigate and determine on two different and distinct appearances in the progress of the hemp culture. The visible difference in plants growing at different places evidently depends on the fitness and situation of the soil. The tallness of the Italian hemp, and its great flexibility and texture, which fit it better for weaving than any from other countries, is unquestionably the result of the influence and operation of the climate; for hemp cultivated in England, from the same kind of seed, is distinguished by its shortness and the coarseness of its texture. Near Anjou, the hemp in the valleys, and on the river shores, is soft and flexible, but uneven.

From the observations on hemp growing in different localities, we are, in general, led to the conclusion that the atmosphere contributes more to the favorable growth of it than the mineral composition of the soil. The last-mentioned soil might, at all times, be more or less suitable for the farmer's object.

The preparation of the soil.

Even the best land which may be selected requires preparation and improvement, so as to fit it for the culture of hemp. In the first place, laborers are required, and then the best and most effective manure must be used—hemp exhausting the soil as much as corn. The main point in the culture of hemp is the judicious selection of the materials used for the preparation and improvement of the land.

In the vicinity of Cremona, in Italy, rags or fragments of woollen cloth, as also wool, leather, shavings of horn, &c., are thrown on the selected ground. At other places, *poudrette* and offal from fowl are used; sediments out of morasses and rivers, and dirt from cities and villages, are collected to serve in the improvement of the soil. It is a well-known fact, that substances of that kind have, from time to time, been distributed over the fields, for the purpose of accelerating the business. In order to prevent the exhaustion of the land, it is the practice to dig it up to the depth of 15 or 20 inches every six, eight, or ten years; which causes new soil to be brought to the surface—thus renewing the power of vegetation.

It being known that manure neither uniformly nor with any certainty decays, should be an inducement to put it on the land before the winter ploughing, and to bury it deep into the ground, so that it may be ready and fit the next spring for receiving the seed.

The hemp-seed cakes, which remain after extracting the oil from the seed, are the most powerful agents for improving the soil. These cakes (*tourtoux*) are in great demand in Belgium, in the vicinity of Courtray, and are used in the manufacture of flax.

Hemp requires deep ploughing; and it should be borne in mind that the ground has to be ploughed thrice—once before winter, and twice in spring. At the last ploughing, no more ground should be ploughed up per day than could be followed up by sowing on the same day, as the seed should fall into loose and moist ground. By observing this rule, a considerable increase in the crop will be the consequence.

In many places in France, especially in the Dauphiné, they are very particular in the cultivation of the ground for hemp, and prefer even the digging with spades to ploughing; but the great expenses for the necessary implements, and the loss of time, swallow up their profits.

The correct and constant assistance which they afford the soil renders it possible, if desired, of hemp being sowed in one and the same field every year. This custom will probably be kept up; and it may be kept up in places where hemp is used for small work—such, for instance, as Dauphiné, where hemp fields of a greater extent than three acres are seldom seen. But it is not advisable to recommend the said custom or practice for imitation generally.

In the department of Maine et Loire, the success in the culture of hemp is much limited, in consequence of changing the system. The hemp fields being so much improved as to yield two crops of wheat in succession without an annual improvement of the soil, the expense for improvement is, consequently, partly saved. However, it has not yet been decided which most diminishes the quality of the ground in the course of two years—two hemp crops by two improvements of the soil, or one hemp and one wheat crop by one improvement.

At Bologna, in Italy, where the best hemp in all Europe is produced, hemp and wheat are sown alternately in the same way. The fields are ploughed in July and September; and, as above mentioned, rags, horn shavings, &c., are put on the ground. In November the field is ploughed for the third time, and then divided into strips of seven feet width, separated by deep furrows. In the spring the ground is covered with some suitable *real* manure—such as *poudrette* or the cocoons of silk worms. Then the hemp seed is sowed, and the same is immediately covered by raking.

In Brittany the fields are ploughed, unexceptionably, three times. For the first time in February; then the ground, thus improved, is ploughed again in the middle of April; and then from twenty-five to thirty loads of manure are used for every three acres—the loads being of two horse power each. The manure is deposited in heaps, and afterwards spread over the whole field by means of forks or rakes. From the 1st to the 10th of May, the last ploughing is done; and immediately thereafter, and by degrees, the sowing in rows of four feet apart.

In the vicinity of Sulanshboden, they are in the habit of ploughing their land the first time before winter sets in. The ground, being laid open to the influence of air and weather, improves very much during the winter season, in favor of vegetation. It has already been stated above, that, *in* all cases, manure should be put on and ploughed under in autumn.

The selection of seed and sowing.

The proper time for sowing hemp seed is, according to the climate, from March to June. As frost will destroy the young hemp plants, it should be sown when frost is fairly out of the ground.

After numerous experiments, it has been ascertained that the earliest sowing produced the best hemp—it being tall and of flexible fibres. Therefore, it might be ventured to sow hemp seed earlier than above stated; always, however, keeping a sufficient quantity of seed in reserve, to be used in case of accident. For caution's sake, a farmer, who has more than one hemp field, should divide his land into several lots, sowing them successively from week to week. By so doing, he will escape the danger of a total failure, sometimes occasioned by frost or dryness.

At some places in France, in order to avoid the accumulation of different work at one and the same time, peas, beans, &c., are sowed between the hemp. This is usually represented as an important convenience; as, by the time the crop of the one is gathered, the other makes its appearance above ground.

Good hemp seed should be coarse, heavy in weight, and of a darkish gray color, with small white streaks. Light seed, of a whitish appearance, is unfit for sowing. Always, before sowing, an experiment should be made with the seed, by mixing some of it with moist earth, and letting it germinate.

The good success of the hemp crop depends much on the selection of the seed. It should always be kept in mind, that seed from one and the same field can only be used for two years on the same spot. In the third year it overgrows, and produces poor, branchy, worthless hemp. It is advisable to procure seed for that purpose from other places—particularly from some distance. The best hemp in Brittany is raised from seed brought from Russia. In the vicinity of Anjou, they procure seed from the Dauphiné, and the Dauphiné gets its seed from Piedmont and Naples.

That hemp seed will overgrow in one and the same soil, is a fact of which every hemp grower must be aware. A failure is often the consequence of neglecting to change the seed. Seed which is overgrown in one place gives generally a remarkably good crop in another place. Overgrown Russian seed, exported from Riga, and which probably had been sold as unfit for sowing again, is considered the best in Anjou.

The quantity of seed required for a certain tract of land depends on the purpose and the fabric for which it is intended to be used. A good crop of hemp requires from 7 to 8 hectolitres to 3 acres, (a hectolitre being about 26.4 gallons, wine measure.) A loose and sandy soil requires more than one which is moist and rich.

If it is desired to obtain tall and thin hemp, it is necessary for the seed to be sowed very thick; then the stems will grow tall to such a degree as to be fit for the spinning wheel. In this case, from 30 to 40, and even 45 zetwerikofs of seed are required for every three acres of land. In the Dauphiné, where the most hemp is cultivated for the manufacture of white linen, 40 pounds of seed are taken per acre.

Thinly sown hemp seed will branch very much in its growth, the stems getting strong and thick, and producing an abundance of seed. The hemp from such plants is coarse and strong, and is only suitable for the manufacture of cables and the coarsest kind of weaving. In general, seed should be procured from the shortest kind of hemp, which can be obtained from any place in Anjou and Brittany. Of such seed, only 3 or 4 hectolitres to a hector of land is requisite, which is equal to 12 to 15 zetwerikofs to 3 acres. This produces very good hemp for cables and coarse linen.

When hemp seed is sown for the purpose of raising seed, less seed (as above described) is required for the same quantity of land—12 zetwerikofs to 3 acres would be sufficient. In the course of growth, the weaker plants should be pulled up by the roots, leaving a space of 8 to 10 inches and more between the remainder, which then will be more exposed to the influence of the sun, increasing in branches and producing more seed. The hemp from such plants may be used for the manufacture of cables. This is the method to procure good seed.

It is known that at different parts of England, and in America, salt is mixed with the seed, to accelerate the germination and growth of the plants; but it serves only to scatter the more the seed.

After the sowing of the hemp seed, it should immediately be covered by light loose earth. In the ordinary way, it cannot be avoided that many grains are left uncovered on the ground; but it may be observed that these, generally, will commence to sprout and to vegetate sooner than those deeply covered. For that reason, it is sufficient to cover the seed to the thickness of half an inch, which is usually done by a light rake, or with a light brier bush.

In some places it has proved successful to cover the seed with small light chips, new straw, or small twigs; thus keeping it in a loose and fresh situation, and protecting the young growing plants. In France, a layer of rotten dirt is spread over the seed for the same purpose. All these customs, however, are, at the best, of no great account, if we look upon the good success attained in Italy.

As soon as the sowing is done, staffs with flags and other fixtures should be set up at the most conspicuous parts of the fields, so as to frighten and scare away birds, mice, and other vermin, which destroy the seed. The discharge of a gun, at proper intervals, has also a good effect.

The examination of the plants.

Soon after the sowing has been completed in a moist ground, or if the soil has been moistened by rain, the seed will germinate, and the young plants will make their appearance on the surface of the ground. Should the soil, however, be dry, and not have been moistened by rain, the seed will remain in the ground for a month without germination. This is considered a misfortune to the farmer. If even some few plants should make their appearance in the course of a month, they will be weak and sickly; and the longer the seed lies in the ground the greater will be the loss.

In order to avoid this misfortune, the farmer should endeavor to sow the seed on the same day of the last ploughing, and, if possible, simultaneously with it, as the soil will then possess sufficient moisture for the germination and the bringing forth of the plant above ground. Artificial means for moistening the ground in dry seasons (such as small garden watering engines, &c.) have sometimes been used to great advantage.

After the plants commence growing, they must be examined twice or three times, and, wherever the plants appear too thick together, some of them must be pulled up by the root; however, always the weakest ones, and in such a manner as to leave the remaining ones every way 2 or 3 inches distant from each other. At that distance the growing plants will produce fibres fit for the manufacture of home-made linen. If intended to be manufactured into cables and sail cloth, the plants should stand more than twice that distance from each other.

All this has to be done before the plants reach the height of six inches; afterwards it is too late, and all has to be left alone. The male hemp plant, in proportion to the female, is always as one to three. The male is of a handsomer appearance, and in the start obtains a greater height than the female, but afterwards the female overgrows the male hemp rapidly.

The beauty and the good success of the hemp depend, independent of the improvements and ploughings of the soil, and after the seed has been deposited in the ground, on a suitable rain in proper time. Too much rain will cause the hemp to remain short; on the contrary, a moderate rain will cause the stalks to stretch and grow long. Heavy winds, storms, and hail, will cause mischief in a field of hemp, as well as of any other production of the soil. The successful selection of a suitable spot, protected by hills, woods, or otherwise, will shield hemp from boisterous weather. In some of the departments of France, the good custom prevails of sowing hemp seed alongside of extensive walls and fences. This protects the stalks from storms and many other injurious influences. In the Dauphiné, hemp seed is intersowed with other vegetables, such as beans, peas, tobacco, potatoes, &c.

Under any circumstances, it is of the greatest importance, in the cultivation of hemp, to turn the farmer's whole attention to the care of the plant in its first start of vegetation. As soon as the plants advance in growth, and the stalks become stronger, the care and attention required are gradually lessened. Hemp, in a luxuriant growth, is not affected by the intergrowth of other weeds or grass. Hemp, keeping up itself an animated growth, suppresses the existence of all other herbs intermixing with it. A field of hemp is always clean and pleasant to view.

The harvest.

Towards fall, the maturity of the hemp should be watched with the greatest exactness and particularity. If the proper time has passed by and been neglected, the stalks will commence rotting or hardening; in either case, the quality will be spoiled, and be unfit for weaving or the manufacture of cables. But, on the contrary, if the harvest commences too soon for getting hemp for spinning or weaving, then the result will be a weak twine, and the linen manufactured from it will soon be worn out.

The time of maturity is distinguished in both the generic characters. The male hemp is to be pulled the first, after the dust from the blossoms ceases to fall, and the upper leaves begin to turn yellow. In Brittany it is pulled about the middle of July. To pull and gather the male hemp from three acres of ground* requires 55 laborers for one day, who divide themselves between the furrows, in order that no male hemp may be left in the field.

The last species, or female hemp, is pulled about six weeks afterwards. It is distinguished from the male hemp by its being stouter, and having buds and seed at its extremities. It is pulled in September, when the leaves of the plants turn yellow and begin to drop, and the buds commence closing, and the seed is getting of a dark color. To pull up the female hemp from three acres of land, 30 laborers are required for one day.

To secure white, soft, and silky hemp for the spinning wheel, the male hemp should be pulled before the leaves begin to get yellow, or when the upper extremities of the plant commence turning downwards. For the purpose of spinning, the male hemp is always preferable to the female hemp, which is invariably coarse.

In the usual way, the plants are pulled up by the root, which mode is followed in France and other countries. This custom, however, is not commendable, many of the stalks being bruised by it, as has been experienced in Russia. On pulling up by the root, many stalks are broken, the fibres spoiled, and, moreover, much seed is lost. On an extensive hemp field it would be more convenient to cut or nip off the stalks; or it might be proposed to mow the hemp, the stubbles serving partly for the improvement of the land.

Where farming is carried on systematically, rape seed is scattered between the female hemp, after the male hemp has been pulled up. This seed soon takes root. It is of but feeble growth at first, but, after the harvest of the female hemp, the plant grows stronger, yielding the farmer another harvest of a new product. Instead of rape seed, the seed of *melilot trefoil, (trifolium pratense,)* and of small cabbage, may be sown to advantage.

In some places the farmers pull up, without the least distinction, the male and female hemp plants at the same time. This, however, is evidently against the farmer's own interest and the general good. It is a fact, that the stalks of the female hemp remain green, at least until the seed gets ripe; during which time the male hemp plants, standing between the others, are nearly rotten. Such a harvest gives a miserable crop; its produce not having strength enough to be good for spinning; nor the required tenderness and flexibility to be fit for weaving, and, when woven, it will soon rot. In addition thereto is the great loss in seed—an important article, so much in demand every where. These form two distinct losses—quantity and quality of produce.

As soon as the male or female hemp is pulled up, or mowed, it should be tied up in small fagots. The fagots of the male hemp should be set up, standing in heaps similar to the sheaves of wheat; but the fagots of the female hemp should be set upright in double rows, supporting and leaning against each other, (in the shape of a roof,) and the sides and tops should be covered with straw. In this position the male hemp should remain two or three days in the field, so as to get its first drying. The female hemp should remain some longer time, to allow the ripening of the seed, which should be well covered, to be protected against destruction by wild birds and chickens, which are extremely fond of it. The fagots should be changed, so as to dry the stalks.

Many different methods are employed to free the seed from the stalks. In some places large sheets are spread on the ground, on which the heads of the female hemp are beaten with sticks. In others, open barrels are preferred, over and against the open ends of which the heads of the stalks are beaten, causing the freed seed to drop into the barrels. All thrashing or squeezing should be carefully avoided, as it would greatly injure the seed. Frequently the heads with the buds and seed are cut from the stalks by means of an axe; the buds are then dried in the sun, and, when dry enough, rubbed or beaten in a bag, to get out the seed. This mode may be considered the most convenient, if the parts thus cut off from the stalks be not taken into consideration.

If the heads and buds are dry, the methods mentioned to separate the seed would be pretty convenient, only that in those cases much seed remains in the heads of the stalks. In addition to the beating, large iron or strong wooden combs with long and strong teeth are used, which are fastened at any convenient place; the heads of the stalks are drawn through between the teeth of these combs, and thus almost all the buds and seed are stripped from the stalks. The buds with the seed are then dried in the sun, and then beaten in a bag as above mentioned. To separate the heavy seed from the light, after having been well dried in the sun, and beaten and rubbed, the best way would be, to take the hemp chaff and seed to a large barn with a smooth and tight floor; take your position on one side of the floor, and throw the chaff and seed, by means of a shovel, and with circular motion, towards the opposite side of the floor; continuing this operation as long as there is chaff to throw, without changing your position or direction in throwing. After having finished, all the best and heaviest seed will be found at the greatest distance, the less heavy seed about midway, and the chaff and lighter seed near your stand. In this manner the seed may be easily assorted; the farthest and heaviest to be used as seed for the next year, the second quality for oil for painters, and the balance to feed and fatten fowl, such as chickens, geese, &c.

After having been assorted, the seed intended for sowing, or otherwise to be kept for any length of time, should be deposited in a dry and airy loft of a house, put in small heaps, and be stirred up at least once a week, so that it may dry uniformly. If the stirring up be neglected, the seed will surely turn black and useless. One month's drying will fit the seed to be put in bags or barrels, (the top of the latter to be a little open,) to be stored in a dry place for future use. Great care should be taken to prevent rats, mice, or other vermin, from making depredation.

Some difficulty exists in determining the time required for obtaining the best seed for the manufacture of oil. Frequently, the seed in one and the same field is not equally heavy. At other times, the seed has a good appearance, but yields little oil. The reason for that may be, that time enough had not been allowed to ripen it, and convert it into oily substances. The average time for ripening seed is not less than two nor more than three months.

The oil trade is daily on the increase. For that purpose, the best quality of seed is used; but cannot be kept for it over one year, when the remainder is stored away in greater quantities than are required for sowing.

After the seed has been separated from the sheaf, the fagots or bundles of hemp should be brought on for immersion; and then a new process of work commences, which may be denominated the

SECOND DIVISION.

The immersion of hemp.

The stalks of hemp consist of, first, a tender skin over the whole plant, which is covered by a greasy, gumlike substance, resembling resin. This matter is known by the name of "*grease of gum.*" Secondly, of a layer of fibres glued together with the same matter. And, thirdly, of the wood parts, which form the hard inside of the plant or stalk. The amount of this sticky matter, or greasy substance, contained in the hemp plant, is in proportion of 5 to 148. Experiments have shown that of 148 pounds of hemp stalks, only 143 pounds remain after undergoing the process of immersion. But this proportion varies according to the degree of dryness. The above represents the loss in weight, after immersion *and drying.*

The object of immersion is to dissolve or to destroy the power of the gummy matter spread over the whole stalk, thereby separating the fibres from the inside wood portion of the stalk, and to part and separate the fibres from each other, so as to fit them for the spinning wheel. This operation is one of the most important processes in the manufacture of hemp. If this process of immersion should be badly managed, the whole crop would be destroyed by it. It requires practice and experience; but, above all, strict attention and constant examination.

The farmer, having other work to attend to, has not always the means, and cannot, or does not, understand how to practise the immersion of hemp. For this reason, there are in France a certain class of men called "*masters*," who follow exclusively the business of the immersion of hemp. In Anjou, hemp is immersed in the rivers Loire, Sarte, and Mena. The shores of these rivers are rented out in parts to fishermen. The masters of hemp immersion obtain, for a fixed consideration, from the fishermen, the privilege of immersing hemp. The farmer hands to the master the hemp in bundles as taken from the fields, and pays him in hemp—one out of thirteen. This connecting their interest forwards the immersion and produces good results. The reason of attaching such importance to their hemp manufacture is well founded.

When the hemp in the field has got sufficiently dry, (which requires from eight to ten days,) and after the seed has been separated from the female hemp, then the operation progresses to the process of immersion. It has been advised by some farmers to dry the hemp first, and then submit it to immersion; but experience has shown no gain by it. It is a matter of no consequence to let the leaves remain on the stalks during immersion; to remove them would only prove a loss of time and money.

In France the hemp undergoes the process of immersion, in most instances, with the roots, leaves, and heads, on the plants or stalks. It is much better to cut them off, on a piece of wood or plank, by means of an axe. Without the roots and heads, which only entangle the stalks and increase the expenses, they are much easier to manage, and to pack in the water for immersion.

To immerse hemp successfully, the following directions should be strictly adhered to:

1st. The hemp should be tied up in bundles, carried from the field, and all stalks fit for the spinning wheel should be separately assorted.

2dly. The stalks should be as much as possible of the same shade of color, so that, in the process of immersion, no spots may be produced, which will unfit the produce for the spinning wheel.

3dly. The hemp should be mowed or pulled up when perfectly matured, which necessarily has to be observed, if it is desired to obtain fine, flexible, and strong hemp for the spinning wheel.

4thly. The hemp, immersed at one and the same time, should be of the same degree of maturity; different stages of maturity are the cause of injury of its beauty and whiteness. The female hemp arriving at maturity after the male henp, they should by no means be immersed at the same time, or be mixed together at any time. It will not obtain an equal degree of strength, and the absence of it in hemp manufactured into cables is visible.

5thly. The stalks should be deposited in water, in bundles, as equal and clean as possible, without grass among the stalks; and bundles which are entangled and broken should not be immersed. The leaves upon the stalks do no harm.

6thly. The stalks should be, as much as possible, of the same thickness and length. Thicker stalks, and those of the female hemp, should remain longer in the field to dry, and be longer immersed. Thinner stalks amongst them would be spoiled, or, at least, would have to remain immersed longer than necessary. Stalks of unequal length will cause greater expenses in the further progress of the work.

The immersion can be done in three different ways, according to locality. First, in running water, or a stream; secondly, in standing water, such as a lake, pool, or a pit dug for the purpose; and, lastly, by dew.

The immersion in running water

Is to be preferred to all others. But not all kinds of water are fit for the operation. River water may sometimes contain a solution of some iron, which will cause the hemp immersed therein to be of a reddish color. A rapid current is not to be recommended, unless some slack water can be obtained by damming up the stream. A moderate running stream is considered the best. The bundles of hemp should be laid in the water in regular layers, so that the extremities and the centre of the hemp may be horizontal when the heap is complete. Stones, logs of wood, and other materials, are put on the top of it, to press the whole heap uniformly down below the surface of the water; but not more weight should be put on than is required merely to keep it down. In this situation the hemp has to remain more or less time, according to the temperature of the water. During the summer season, when the water in streams gets warm, five days are enough; and it seldom requires more than eight days to accomplish the process of immersion. In the fall, when the water is cold, it requires fifteen days' immersion in heaps. The female hemp demands a still longer time. The workmen should constantly examine the situation of the hemp, and be very careful not to let pass by the time when the hemp should be taken out of the water. The hemp should by no means remain in the water a longer time than is required to dissolve the gummy matter on the stalks. A longer time of immersion would rot and spoil the produce.

The immersion in standing water.

Where running water cannot be got, nor an opportunity of performing the immersion in a stream, necessity compels to execute the process in lakes, pools, or pits dug for the purpose, into which water has to be conducted from the nearest stream, lake, or even any standing rain water collected in a pit, &c. In this instance the farmer should be careful to avoid taking water from holes which might contain a solution of some iron, as this would communicate to the material a stain of some color, which afterwards could not be corrected. A newly dug immersing pit, as well as one that has already been used for that purpose, may contain some such injurious substance. Therefore, it is advisable to fill such pits with water some weeks previous, and empty them and clean them immediately before used; then fill them again for actual use. The depth of such pit should be six feet. The water in it would remain cool for at least one day, and the operation of immersing the hemp may be performed with good success.

The hemp should not touch the sides of the pit; to avoid which, the inside of it should be lined with wood or planks, which will prevent the hemp from touching either the sides or the bottom. The immersion of hemp in pits, especially in standing water, is soon accomplished; wherefore, it requires more care and attention. Trifling circumstances may injure the hemp. During the first three days after the immersion, it is only necessary to observe that the hemp is sufficiently covered by water. After the lapse of four or five days, especially during the warm season, small air bubbles will make their appearance at the extremities of the hemp, and rise to the surface of the water. After the escape of a certain quantity, they will diminish in number. After that, the progress has to be carefully watched and ascertained from time to time ; and as soon as the sign of the completion of the process appears, the hemp should be immediately removed from the pit, as otherwise it will commence rotting. The last-mentioned sign determines the completion of the immersion.

The curing of hemp in dew, or (as it is called) dew-rotted hemp.

Where this mode of curing is practised, the sheaves of hemp should be of a short cut, and as clean as possible. Thus they are left to the influence of the atmosphere, but should be turned over after a rain, so that the lower stalks do not get cured too much. From time to time, they are turned over again—the finishing of this process depending on the quantity of dew and rain, and equally on the condition of the atmosphere, winds, and temperature. This is continued for four or six weeks, and in dry times from nine to eleven weeks. When the hemp is sufficiently cured, it should be removed on a clear and dry day. The covering of the sheaves with a layer of dirt, to accelerate the curing process, should never be practised, as it communicates to the hemp a dirty gray appearance.

The appearance and condition of hemp manufactured into linen are different, and depend on the immersion of the hemp. The immersion in running soft water produces a preferable white and strong product. In standing water the product is of a yellowish-green color. The hemp well dew cured produces for the spinning wheel a gray and light white article. A black or dark ground is invariably a sure sign that the hemp has undergone a too long immersion, the consequence of which is tearing and rotting.

A brown or reddish color is produced by a solution of iron in the water used for immersion.

The immersion of hemp is a chemical process, to be noticed during the time of operation. The observations on it may be submitted here, in the following enumeration :

1st. The water begins to darken.

2dly. Bubbles of air appear on the surface of the water, from the ends of the stalks.

3dly. The water turns reddish.

4thly. The water commences creating acid, and converts the color of lacmus into red.

5thly. The acid disappears, bubbles of air appear once more, accompanied by a strong scented smell, and in a perfectly distinct manner. Mixed with atmospheric air, it ignites, by applying a burning substance.

6thly. The water turns to a blue color, lacmus is changed into red by the acid, and appears to be a weak ley of ammoniac.

Thus the immersion represents three periods of fermentation: 1st, unperceived; 2d, the acidulated ; and, 3d, the rot or decomposition, and ley. But as soon as the last period commences, the process of immersion should immediately be interrupted, or the rot or decomposition will commence, and be communicated to the stalks, and destroy the fibres.

The completion of the immersion of hemp can also be known by the signs hereafter described: when the fibres from the stalks easily part at the commencement of the peeling of the plant from the root or the top end. For this purpose, the stalk is taken from the middle of a bundle or garb, as the outside stalks are always sooner done; and from them the condition of the hemp could not be determined with certainty. The breaking the wood part of a stalk is also a sure sign of the finishing of the immersion. Furthermore, if some leaves should be on the stalks, which can be removed with ease, and without injuring the fibres, the process may be considered as completed. These distinct instructions should serve as guides in the process of the immersion of hemp, and at the same time break up the old custom still in practice. During the time of immersion, a gas escapes, the smell of which is very unpleasant to the inhabitants of the neighborhood; but however bad the smell may be, it is by no means injurious to health. The people performing the immersion of hemp all enjoy good health, and the fish in the water where hemp has been immersed do not die in consequence of it. In France, where the shores of the rivers are rented out to fishermen, as above stated, the most fish are caught near the places where hemp is immersed.

It is a prejudice that the bad smell in extensive hemp-immersion establishments impairs the health of the people engaged in the business. They should be more encouraged. Instead of the bad success they meet with, they should be rewarded.

Hemp has been immersed in boiling water with a slight solution of soap and ley. This remedy has produced out of hemp a pretty good article for the spinning-wheel; the fibres parted well from the wood parts, and made fine white twine; but the linen manufactured out of it had neither strength nor elasticity, and could never be worked into twine of a high number.

In Germany steam has been tried for dissolving the gummy substance on the stalks, but without success. A high temperature of steam injures the fibres, and weakens and darkens the lustre. The weaving from such twine soon parts and goes to pieces.

An invention was lately made to execute the immersion of hemp by means of a chemically-operating machine, to which another was attached for breaking the hemp, and various other contrivances. It was intended, at the same time, to dissolve the gummy matter, separate the fibres from the stalk, and the fibres from each other; but, in practice, all this proved abortive. All mechanical assistance in this branch of the hemp business seems to have been abandoned, as nothing has been heard of renewed trials.

Drying after immersion.

After the hemp has been taken out of the water, the work of drying it has to commence in a regular way. It is important to do this with great attention, the good condition of the hemp depending on it.

Hemp is usually dried in open fields. In clear and fine weather it requires from 7 to 8 days. In Anjou, the experienced farmers prefer drying their hemp in an upright position, and tied and fastened in bundles just as they come from the immersion. The hilly sides of river shores are very convenient to dry hemp, such as on the Loire, Sarte, and Mena. On meadows the hemp would be exposed to the moisture of the turf, which might be communicated from the grass to the hemp. Such vapors impart to the hemp a reddish color, and sometimes spots, which it is impossible to get out by bleaching. To avoid these consequences, the bundles should be rebound, and then be turned over every day to the influence of the sun. During heavy rains, or heavy dews, the hemp should be taken up from the field. In other places the hemp is dried in an unbound state, spread on a sandy or clean meadow. This method requires all the caution above mentioned. After the hemp has sufficiently dried, it should be taken up on a clear, dry day, and carried to shops or barns; the least dampness remaining in the stalks may do damage. The shops and barns should be above the moist ground as high as possible. On farms the hemp is usually stored in the loft of the dwelling-houses. To ascertain whether the hemp is sufficiently dried, it is only necessary to break and rub a stalk between the fingers. If the wood part crumbles and falls freely out between the fibres, when gently shaken, the hemp is dry enough to be stored away. It depends on the first drying of the hemp after its immersion, to obtain a good and perfect material for the spinning wheel, free from all wood parts, as it can be worked well in the brake. At the time of executing the last operation of finishing the work, (which is usually during the winter,) the hemp has to undergo one more process of drying. In clear weather three days are sufficient to accomplish the second drying process, provided the hemp be of the above-mentioned quality.

Clear and warm days are scarce in fall and winter, and then hardly ever last for three days successively; therefore, necessity requires the business to be attended to with expedition. To ascertain the sufficient dryness of the hemp, skill and experience should be displayed. Hemp dried in the sun is always the best quality for the spinning wheel. So is hemp dried, by a low degree of heat, in a bake oven, or a malt kiln, or in various other ways. All these substitutes assist to accelerate the work; they being more or less convenient. The temperature in an oven, after the removal of the bread, would be from 80 to 100 degrees, (*Celsius*,) and sometimes higher. Such a heat would penetrate the substance with such a powerful dryness as to roast any vegetable matter. The hemp would get of a reddish color, and be spoiled. The greasy fluid of the hemp still remains in some degree united with the fibres, which dry up and fly off like dust. Sometimes it regenerates like a new gum in the fibres, and then the hemp cannot be worked by the brake. The moisture of the hemp is changed into steam, which, unable to escape, condenses again, and becomes visible on the stalks, which again become soft and flexible; and the fibres, losing in the process of spinning all lustre and strength, pass the brake in a clammy state, without the desired effect.

Hemp dried in the sun is not exposed to so high and destructive a degree of temperature, it being hardly 60 degrees (*Celsius*.) There are, however, many other and more convenient modes of drying hemp, and it would be desirable to have them more in general use. In some parts of Germany, drying establishments are erected, which consist of extensive low rooms with openings for the escape of steam or vapors, in which the hemp in bundles is placed, either upright or horizontally. The furnace consists of an oven of potter's clay, surrounded by earth or bricks, through which the temperature may be gradually increased or diminished. The doors of said oven open into a chimney, so as to prevent danger from fire. Communicating the heat by degrees, they are very useful to the drying process. At other places, pipes, through which boiling water or steam circulates, are used to advantage. The mode of increasing the heat gradually is very advantageous, and will often prevent loss in the pursuit of this branch of industry.

The advantage of having heated ovens to dry hemp, and to be able to increase the heat gradually from 25 to 50 degrees, (*Celsius,*) and to keep a uniform temperature for any length of time, is, that the water contained in the hemp is soon evaporated through the opening in the building, in such a manner that, as the steam diminishes, the temperature increases gradually to 40 and 45 degrees, (*Celsius,*) and keeps the hemp in that degree of heat for any length of time. After the drying process is finished, the hemp is taken out in bundles from the drying rooms, and put for some hours in the open air to cool, and then it is taken to the brake.

The breaking of hemp.

To prepare hemp for the spinning wheel and other purposes, it is necessary to separate the fibres from the internal wood parts; which can be done in two ways—either simply by hand, or assisted by some contrivance known by the name of a "*brake.*"

The breaking of the hemp stalks by hand is done, on the farms, by female children and old people. This business is carried on in a very simple way: the operator holds in his left hand the foremost binding of the bundle of hemp, from which two or three stalks are taken at a time; by the assistance of a small piece of wood, the stalks are broken between the fingers, and at the same time separated, and the wood parts taken from the fibres; the clean hemp is then twisted round three or four times, to prevent the entangling amongst itself.

To secure the hands against injury from the breaking of the stalks, the workman wears a kind of glove over his thumb.

The brake which is still in use in France (Burgundy and Champagne) has some inconveniences. The main one is apparent in the great loss of time, and that the fibres of the hemp are joined after breaking in unequal lengths. Then it does not clean the hemp from dust, as it should do, and there are other deficiencies in breaking. And, above all, the product can be bleached only with great difficulty. These inconveniences are sometimes of greater importance than the use of the brake.

The construction of the brake itself is very simple. It consists (fig. 1) of wooden jaws, (*a* and *b*,) connected at one end by a strong iron bolt (*c*.) The under part is fixed on four inclined legs, with the necessary bracing, about 30 inches high, so that the workman may do the work standing. The under part is nothing more than a piece of a wooden log of 5 or 6 inches wide, and 4 or 5 feet long; two openings are lengthwise chiselled through the piece, at a proper distance from each other, (*d d*,) and an inch wide each. At the upper edge, these openings are bevelled off like a dull knife. The upper part or jaw, (*a b*,) with a handle at one end, is also parted from the handle the whole length, and made to fit in the two openings or knives on the under part, and bevelled similar to them. It is fixed to the lower piece by the iron bolt, (*c*,) which connects both the boards, or the jaw piece, with the under knives, and serves sometimes as a hinge. In fitting the jaw piece to the knives below, sufficient play room should be left between them.

The workman takes hold with his left hand of a bundle of hemp, and with his right hand he lifts up the jaw piece of the brake, and puts the bundle of stalks between the jaw and the knives; then the workman, by one or more downward motions with the jaw piece, breaks the wood parts, which crumble and fall from the fibres, through the openings of the knives, to the ground. After one-half of the bundle of stalks has been completely broken and sufficiently shaken, the workman reverses the bundle in his left hand, and puts the other half of the stalks between the jaw and knives, working away until all parts of the stalks are well broken, and the wood substance is separated and shaken out of the fibres of the hemp. The work is continued until two pounds of fibres have been cleared, when this quantity is twisted and doubled, to prevent the entangling of the extremities in knots.

The above-described brake is a clumsy apparatus, and not satisfactory in many respects. It does not mash the stalks enough at its extremities, where the fibres are the tenderest, but pinches them between the jaw and knives; thus tearing and breaking many. There is a difference between squeezing the fibres, and rubbing and beating them; the hemp getting much entangled by the former.

The work with this kind of brake is accompanied by a considerable loss of time, not to mention other inconveniences. Up to the present time, no means have been discovered to improve this incomplete brake.

Many and various brakes have been suggested; but not one, amongst all these expensive productions, has answered the purpose.

To remedy the inconveniences, (at least some,) although they cannot be avoided altogether in the use of the above-mentioned brake, the following rules may be observed to advantage:

1st. Strengthen the sides of the upper jaw, and the knives of the lower piece, and round them off carefully. They should often be sharpened, which will ease and speed the work. This is usually neglected.

2d. The fibres should be pulled out at the very time of lifting up the jaw piece, slowly and carefully at first, so as to free the extremities from the wood parts; they being not all broken, many fibres might otherwise be torn. Hemp may be broken very handily, if, by the pressure of the jaw piece, the fibres split perfectly, and clear themselves from the wood particles.

Submitting the fibres of hemp to a hard beating in the brake is very advantageous, especially if it is desired to get a good quality of hemp for the spinning wheel.

It may also be done by fixing a short chain to a piece of hard wood of sufficient thickness. The fibres of a bundle of hemp being laid on a smooth log, or a stone, they are beaten by the chain, when all small wood fragments will freely separate, and may be shaken out, even if the hemp should retain some gummy matter.

A better instrument for breaking hemp than the above described is used in France. This is but a square piece of hard wood, (fig. 2,) which is 10¼ inches long, 5 inches wide, and 3½ inches thick. The under side of this block has ½ inch deep grooves, the outer or upper side of which is rounded off; and in the centre of the upper part of the block is fixed a bent handle, so as to work it conveniently.

The hemp is uniformly spread upon a common even thrashing floor, and beaten with the grooved block, first on the root ends, next on the other ends, and finally in the middle of the stalks. After having been beaten sufficiently on one side, it should be turned over, and beaten on the other side in the same manner. When sufficiently beaten, the stalks or fibres should be taken up and well shaken, so as to clean the hemp from dust and all the small fragments of the wood parts. In the process of beating, it is not necessary to expose the hemp to a great degree of heat before the beating. It stands better the necessary operations. The thinnest extremities of the hemp do not escape the brake, and are not injured by beating, (*cspadge,*) which has to be done after the hemp has passed the brake, and finish the operation by beating, to clear the hemp from the remaining dust and wood particles.

To beat or swingle the hemp requires the following apparatus, (fig. 3.) A board (*a b*) vertically fixed to a platform (*c d.*) The board has at its upper edge a round hollow (*e.*) The workman takes a bundle of hemp in his left hand, near the middle, and puts it in the hollow place over the board, (at *e*,) so that one-half of the bundle of hemp hangs down on the side of the board (*a b.*) Then the hemp should be beaten by a wooden sword (fig. *f.*) The sword is a piece of wood 2 feet long, 4 or 5 inches wide, and a little over ½ inch thick, with a handle to it, and sharpened or bevelled on both sides. With this sword the hemp hanging alongside of the board is beaten in every direction, and at the same time the hemp is to be turned to all sides; the middle of the bundle should especially be the most exposed to the blows of the sword. After one side has been beaten enough, the workmen change the bundles in the left hand, by taking hold of the beaten part, and expose the other part to the same treatment as before, and till the hemp appears to be clean of all small fragments of the wood parts.

The operation of beating the hemp cleans it from the broken particles of the wood parts, tow, and such parts of the fibres as have been torn in the brake. This operation, although simple, should be performed by an experienced workman: he should hold the hemp fast in his hand, so that during the beating no fibres could slip and entangle, or spoil the fibres of the whole bundle. The strokes of the sword should be so directed as not to tear or entangle the fibres. When the hemp, during beating, has to be bent over, the sharp edges of the sword (*c*) and the hollow place (*e*) should be rounded off.

Hemp broken and beaten as described is the usual kind brought to market for sale, and paid for according to its quality or purpose—as, for instance, for the manufacture of cables or small ropes, or the fabrication of various kinds of linen. Tow and the short broken fibres of hemp are used for the weaving of coarse articles, &c. The wood remains of the hemp are used to heat ovens, and for matches; and at some places it is ground and manufactured into wrapping paper.

THIRD DIVISION.

To refine the raw hemp.

To accomplish the desired object, it must be viewed from two points—namely, the expenses incurred to satisfy the necessities of trade, compared with the results arising from the culture of hemp. In reference thereto, some remarks are here presented in regard to the expenses in the cultivation up to the time of assorting the product, according to the different degrees of quality, to satisfy the wants for distinct manufactures.

Expenses of producing raw hemp.

If we examine the labor and the first working of hemp, it is impossible to conceive how to overcome the many and different labors, every one of them requiring attention and unceasing care. This may be the main reason that hemp can be produced better in small quantities than on a large scale. Furthermore, the last may be the consequence of the ****, where work hands are in abundance, land convenient and suitable, and where the proprietor or tradesman possesses sufficient capital.

The good success and results of the culture and the manufacture of hemp occur always in parts of countries where the land is divided into small portions amongst the farmers; for instance, in Dôfée, where every family has its own patch of hemp—the land for it being selected near the dwelling-houses, so as to enable them to protect it the better. The ploughing and other hard work are done by turns amongst the families, alternately, as to hire laborers is difficult, on account of their scarcity and the highness of wages. The lighter work, such as the thinning of the plant, the pulling and breaking, is all done by the members of the family—amongst the females, children, and old people. The proceeds therefrom are put into a box (*tire-lire*) where the money of the treasury is kept. They spend in this way all their idle hours on the farm, without loss of time.

At Anjou, in France, the farms, owned by lords, are not divided as in Dauphiné. These lords rent out the lands to families, (their tenants,) who should be inclined to cultivate hemp; they pay rent for the privilege, and are glad to get good land in a good situation. In all cases, the rent for hemp land is much higher than for any other arable lands. In that place, a hector (about 3 acres) of good arable land under wheat will bring from 50 to 60 francs ($10 to $12) rent per hector. Land under hemp will bring from 150 to 180, and even 200 francs, ($30, $36, and $40,) and on some places more. In the valley of the Loire, where the hemp grows the best, the rent for one hector (or 3 acres) amounts to 400 francs, ($80.)

Complaints have often been made about the great quantity of manure consumed by the culture of flax and hemp. It is said that the culture of hemp and flax, if continued and increased, will soon diminish and injure the culture of breadstuffs, without which it would be impossible to exist. These remarks are thoughtless and unjust. The working of hemp requires much manure, and the consequence would be an advanced price for manure, which would induce the farmer to keep more cattle; and, therefore, the cultivation of hemp, on the contrary, may serve to be the source of improving the exhausted soil.

It is difficult to form a positive idea as regards the expense in the production of hemp. It varies according to locality, circumstances, and fertility of the soil. It may be easily conceived that one and the same piece of land will produce more at one time than at another. Anjou hemp, of a good quality, most resembles the Russian hemp exported from Riga. Before any hemp is exported from Russia, its navy is provided for. To draw a comparison, it is desirable to present here a bill of expenses arising from the culture of one hector of land with hemp, intended for the manufacturing of cables or weaving of coarse sail cloth.

Expenses.

Rent for one hector of the best land, average price - -	Fr. 150
To improve one hector of land requires at least 35 to 40 loads of manure of 2,400 pounds each, and at least 3 francs each, amounting to 120 francs; but as on the same improved land, the next	—

year after hemp, wheat should be sown, so one-half of the improvement falls on the wheat, leaving	Fr. 60
First ploughing, early in the spring or fall, (then the land should be manured,) 10 laboring days, at 1½ franc	15
Harrowing the land—3 days, at half price	5
Second ploughing	15
To divide the land in equal parts, at least 9 days	14
The third ploughing, and afterwards to cover the seed and manure, (the last work should be done in the fall or spring,) for which 30 working days are required	45
To level the ground after sowing, 16 female laborers, at 1 franc	16
To examine the plants, 30 days, as above	30
The work of improving the land amounts to	140
The seed of hemp for sowing requires in Anjou no more than 3 hectolitres, (as above mentioned, this quantity of seed is not sufficient to a hector of land to produce hemp fit for weaving of fine linen,) at 15 francs, for good seed	45
Harvest, the first drying on the field, to bind in bundles, and to carry the same to the shop, takes at least 10 male and 30 female laboring days	45
The immersion, drying, and breaking of the hemp, from one hector of ground, (account made in Anjou,) amounts to	150
Total for one hector of land	590

Production.

The average production from one hector of land, in a good year, is 900 kilogrammes (2,280 pounds) of hemp calculated for spinning. The average price is (if the hemp should be fit for the manufacture of cables or sail cloth) 40 francs for 100 pounds, or 50 kilogrammes	720
Clear profits	130

The increase in the calculation is magnified as the soil is more favorable. Some soil will produce 1,500 kilogrammes (3,000 pounds) to a hector for spinning, which, according to quality, commands a higher price.

In the valley of the Loire, the soil produces 500 francs clear profit from a hector, notwithstanding they pay a much higher rent, and require seed—for instance, 3 hectolitres to 7 or 8. This clearly shows how incorrect the calculations of farmers are, when they neglect this important branch of agriculture.

Russia is still the land where, in reality, all necessary materials for the cultivation of hemp may be cheaply obtained, and suitable land in abundance.

The main expense would be the improvement and enriching the soil. This object has long ago claimed the attention of the enlightened farmer. and the Government. As a proof of this truth, the Russian hemp, exported from Riga and St. Petersburg, supplies foreign markets. Notwithstanding the burden of heavy expenses of transportation and duties, it is sold at the price of French hemp.

There can be no doubt, from such a visible profit obtained from the cultivation of hemp in our native country, that we must necessarily produce improvements in farming and manufacturing the raw material.

Assorting hemp.

The value and fitness of the raw hemp for the various fabrications should be judged by its strength of texture, color, smell, and cleanliness. The strength of the texture is of the first importance in the manufacture of cables, sail cloth, and linens, and should be combined with fineness and flexibility. Weak, frail, or breaky texture, is the consequence of a defective immersion or a careless drying; and when it possesses these defects, it is unfit for cables, but may be used in the woof, though not in the warp of light linen.

In Dauphiné, when making servants' linen, they use a coarse but soft hemp, and never mix different textures. The hemp exported from Riga (*chanvre de Riga*) is preferred for cables, on account of its fineness and flexibility; the French article being strong, coarse, and hard. This accounts for their fine sewing thread.

Hemp possessing a white or whitish-yellow color is preferred, in most parts, as being of the best quality. The color will change according to the manner and circumstances of immersion.

Light-gray hemp, after being immersed in standing water, or cured by dew, is not inferior to the white, if the *bonite* should be equal. They both require bleaching; and should the light gray be more difficult to bleach, it is a distinguishing sign of its strength.

In Anjou, the gray hemp is preferred, and reserved for the warp in weaving; reddish-brown or darkish-gray color is an evidence of the immersion having been too long continued, and that the process of rotting has commenced, or that, by carelessness, it has been too much exposed after being moistened. The worst result would be if the texture should not be of one color and appearance. This is also a consequence of neglected immersion, an unequal ripeness of stalks, or not having been sufficiently dried. After all, a bad color is indicative of weakness and frailty, and will soon decay.

The condition of hemp may be ascertained by the smell; when of a late production, and in good state, the scent is strong; when stored away in a moist state, it soon begins to rot and inflame. In most cases, the quality of hemp exposed in a compressed state for a length of time may be determined by the smell. Damp hemp, which smells mouldy or inflamed, should be laid out to dry before stirring; when placed in a large heap, an unavoidable destruction follows. Hemp free from all the before-mentioned bad properties, not entangled, or having no decaying scent, is not considered perfect without the desired degree of cleanliness. In many places fraud is committed in this way, and by mixing different substances to increase the weight, and often by not giving it time to dry. Such usage is ruinous to the culture of this article in France, Russia, and Italy. It is easy to discover when eight or ten parts of dirt, or any foreign substance, is mixed; and, when so discovered, a deduction of twelve or fifteen parts is made for the vendor's villainy. By this means the vendor loses the confidence of the better class of tradesmen, and is then compelled to resort to the lower class, who cheat him in turn. This could be avoided by observing better rules, and not neglecting the produce and manufacture of hemp of equal growth, clean combed, but especially clean and free from woody particles, and, if possible, without dust.

The appearance of hemp varies according to the country from whence it comes. For instance, that of Italy is different from the Russian; and that from Dauphiné is distinguished from Anjou hemp. It also differs, even when produced in the same section of country, according to the localities, plan, and mode of cultivating and manufacturing. The hemp of Anjou is of a tall growth, flexible, and soft, and is cultivated on the river shore. Hemp would appear in a bad condition if it were not fastened and bound in bundles when offered for sale; but, in all cases, it should be assorted into the first, second, and third classes—of best, middling, and inferior.

In Russia, these classes are regulated by law, and are termed—1st, clean, or first rate; 2d, par, or second rate; and, 3d, half clean, or third rate. To secure the foreign trade to Russia, there are stationed inspectors, who receive and deliver, and whose duty it is to handle and examine all hemp brought for sale. [*Law, chapter* 11.] This is to keep in mind the regulation upon the subject in regard to the quality and assorting.

In the clean, or first rate, the inspector has to observe that the hemp is of equal growth, and of long fibres, strength of texture, not entangled, of clean combing, free from woody particles, without tow at the extremities, to be easily parted, and of equal color; but if a quantity of second rate hemp should come under inspection, having all other qualities of the clean or first rate, then it should be received as such. [*Chap.* 8.]

Par, or second rate, should be free from woody particles, without splices, or tow, and of a good texture, even if not so tall as the first rate; but if the hemp should even be of equal growth, and clean, still, if the texture be not so strong, and scant of weight, it would be rejected from the second rate. [*Chap.* 13.]

Half clean, or third rate, should be without splices or tow, not entangled, and, if possible, without woody particles. [*Chap.* 14.]

If hemp should appear for inspection that had been heated or sweated, it would be returned to the owner for proper cooling; and no hemp shall be passed or received that contains dangerous dampness. [*Chap.* 15.]

Hemp which is injured from heating, from dampness, or water, though it may be dried as perfectly as possible, and of the first-rate class, is to be rejected, and not received at all. If accidentally immersed in water, although it may not have lost any of its good qualities, still it must be rejected, and not received, unless under a particular stamp. [*Chap.* 16.]

By the strict observation of these just and wise arrangements, the extended credit of Russian hemp is secured and protected in foreign countries. It is to be hoped that the same may produce great efficiency and utility in the management of hemp culture generally, as the laws are executed conscientiously, with justice and care, by the officers of the Government, and must protect and increase the intercourse with foreign countries. In relation to the inland trade, it is policy to use an inferior article, for the purpose of exporting the better; for if the purchaser should be once deceived, the lost confidence could never be perfectly restored; therefore, the inspecting and assorting of hemp is the only means of increasing the export and confidence; and, consequently, we would sell to better advantage.

FOURTH DIVISION.

Preparing hemp to be fit for manufacturing purposes.

The working or the preparation of hemp which it has to undergo in the culture are distinct from the preparation of raw material after it is delivered into the hands of the manufacturer.

The said preparation consists in softening made by heckling, and is usually done by the fabricant; but sometimes it is delivered already softened, and then considered as a particular branch of business; after it is worked thus, it is not termed raw hemp. At the custom-houses such articles are much higher taxed.

A farmer prepares his hemp either for export or manufacturing, as raw hemp only; and, therefore, he should, by more attention, improve his first work in the culture. The direction of the work itself may be seen under the proper head of "fabrication."

To make hemp soft and flexible.

Hemp selected for spinning or the loom should be of extreme softness; therefore, the working of the hemp by the farmer is not enough, and requires a greater degree of flexibility; and then only it may be worked into twine and linen. Among others, the heckling is a main business, to which the manufacturer should turn all his attention.

By heckling, the fibres are parted from all the dust; this improves the texture by removing the stiffness, and at the same time divides the fibres of hemp.

The old mode to soften hemp is very simple, and the instruments rude. The bundles of hemp are threefold plaited, (similar to a woman's hair-plait,) and then put in an excavated block. (A, fig. 4.) The laborer takes hold of a particular kind of pestle, or mallet, (B, fig. 5;) the end *(c)* is provided with iron, and beats the hemp by rapid and successive blows; the hemp is frequently turned and shaken in proceeding with the work; and the beating is begun from the bindings, if not cut beforehand. This work is continued till the fibres of the hemp are sufficiently divided and softened. The strokes of the workmen should be in such rapid succession as to give, by it, the hemp a degree of perceptible warmth.

Such an operation is one the most fatiguing and injurious to the health of the laborer, who is constantly exposed to the fine dust surrounding and rising from the hemp, and, in managing the heavy mallet in such quick succession, soon operates on the constitution of the laborer. To avoid this, and to save manual labor, it was necessary to substitute some mechanical means. Above all, the work progresses slow, and is expensive. One laborer is able to soften hemp in this manner only 30 lbs. in twelve hours' work. The work itself should be done with great precaution and judgment, or it may entangle and mix the texture of the bundles, and then in heckling increase labor and expense.

This mode of softening hemp is superseded by a very rude and simple machine used in France and Germany, and is usually connected with a flour mill, or moved by other power.

The machine consists of (fig. 6) a foundation or floor (A B) of oak planks; the diameter is about 8 feet. In the centre of the floor, an upright shaft (E) is moved by cog wheels; from the first power (at D) is an iron axle, on which turns a heavy cylinder (C) of stone; the hemp to be softened is to be plaited and laid upon the said floor where the stone cylinder has to pass over. Sometimes the machine is worked by horse power, but usually by water. It may be easily attached to a steam engine when opportunity offers. The bevelled wheels (*b*, *a*) are for that purpose on the shaft, (E) and (D.) In time of operation, the hemp should be turned and shaken by the laborer from time to time, and kept in good order. The hemp gets perfectly clear of all the dust and other matters.

In Dauphiné, the machine is in common use. To work 200 lbs. of hemp, it requires eight hours' constant grinding. The customary price for the named quantity is 2 francs and 75 centimes, but, if the hemp is not intended for fine linen, then it is not so much worked, and the pay is less.

Damp weather is more favorable to the operation of softening than dry, and, when dry, many fibres are rubbed to dust. It is noticed that bad hemp will always contain some gummy fluid. After the hemp has been correctly treated in the immersion, drying, and breaking, before the softening process, the loss is afterwards no more than 1½ or 2 per cent.; but should the hemp be of bad quality, and badly immersed, over heated, and contain many woody parts, the loss amounts often to 13 per cent. In France, the bindings of the hemp are usually cut before they begin to soften the fibres; by doing so, the operation is finished in less time. Then, without the bindings, it requires only six hours to soften 40 kilogrammes.

The ground for erecting such a machine is not extensive, especially where horse power is to be used. It would then only require a five or six fathoms square shed or barn. The machine itself would amount, in Russia, to 600 rubles banco, ($120.) For material, it would require oak timber, iron, and a heavy cylinder of stone. To put the hemp on the floor, and to keep the same in good order under the cylinder, and to attend to the machine, one laborer is sufficient.

In the provinces of Orlovske, Tambovske, and others, where the most prepared hemp is sold, the said machine would be very useful; but not so in other parts of the country, until necessity would call for it.

In France and Belgium, another kind of softening machine for hemp is used, which consists of great and heavy vertical stamps, or pestles, of wood, arranged in a straight line, or in a circle; these stamps are alternately raised by thumbs, or knobs, similar to that in a falling or oil-stamp mill, and fall on the hemp beneath them; the hemp being confined in a strong wooden box. The box forms a circle round the shaft, and is slowly moved by an arrangement of cog wheels in a circular direction; but, if otherwise arranged, the box moves in a straight line, fore and back. If in a circular direction, the number of stamps is nine. The hemp is put into said box, which is provided with cogs round the periphery, and moved round the shaft by gearings connected with the first mover. This machine requires more power; but the result is much greater than that arranged in a straight line. (See the plan of the machine.)

(Fig. 7.) All the machine is enclosed in a nine-cornered framework, (the number of corners may be increased according to the number of stamps intended,) made of hard wood or iron; (*g g g g*,) the horizontal and vertical pieces. In the middle is an iron upright shaft (*c*) moved by the wheel work, (*d*,) which are moved by any first power by the shaft, (*h h*;) (*b b b b*,) nine stamps each, 6 inches thick, and, at the lower end, provided with iron, in the shape of dull teeth. These stamps are lifted up at the upper part (*i, k*) by the thumbs, or knobs, (*ffff*,) which are firmly fixed to the axis, (*l*,) and moved by the bevelled wheel (*e e e e*) from the large wheel (*d*.) At the same time the wheel (*x*) moves the circular box (*a a*) containing the hemp; the motion of the first mover (*h*) sets in motion the centre wheel, (*d*;) and this the axis of the bevelled wheels, (*e e e e*,) on which the thumbs, or knobs, (*ffff*,) striking against the rollers (*z z z z*) in the slit of the stamps, (*i i i i*,) lifting the stamps to the required height, and then fall with the power of their gravity on the hemp in the circular box, (*a a*,) which is slowly kept in motion by the wheel, (*x y*.)

As soon as the machine is put in motion, the stamps work at the hemp in the circular box, (*a a*,) where the hemp was, before starting the machine, put in plaited bundles. The tooth-shaped iron ends of the stamps, in falling on the hemp, soon beat, flatten, and separate the smaller woody particles that might stick to the fibres of the hemp, and, by the sudden repeated blows of the stamps, (if there should be nine stamps, it would make sixty blows in a minute,) impart to the hemp the required temperature. The number of blows may be increased, in a given time, by increasing the power.

Two laborers only are required to attend to the operation of said machine; and from 600 to 800 kilogrammes (from 1,440 to 1,920 lbs.) of hemp may be prepared in twelve hours' work. Such a machine, with all that belongs to it, costs in Paris 5,000 francs, (about $1,000 ;) it requires three-horse power, and would require from four to five square metres of ground. It would be advisable to connect the said machine with a corn mill, or other wheels that are moved by water power. The advantage of the machine consists in the following:

1. Of all machines tried for that purpose, this is the only one that has answered the expectation to satisfaction, and superseded them all by the same power and time, as well as in quality and quantity of work.
2. The production is complete, and even surpasses the hemp worked by hand, as above described.
3. The rapid, successive, and renewed blows of the stamps create the required temperature, as the great object of softening hemp. This machine is highly recommended by the workmen from Anjou and Maine, by certificates, to be a machine which produces the best work.
4. The arrangement of said machine is simple, skilful, and useful, and prepares the best hemp for the spinning wheel.

The machine is remarkably well adapted to work flax as well as hemp; which was proved at the time Mr. G. Dekoster's machine was tried for that purpose. The stamps, with their blunt teeth, have a crossways position to the motion of the circular box. The slow motion of the box at the moment the stamps rest on the hemp produces a rubbing or dragging between the box and the stamp, such as would be done by rubbing between the fingers or hands of men. In the fabric at Alençon, it was ascertained that the machine did not tear the fibres; therefore the hemp produces less splices and tow in heckling.

The heckling of hemp for cables.

Hemp intended to be worked into ropes should not be exposed on the softening machine; it is sufficient when swingled, and cleaned by the wooden sword, as before described.

But it may become necessary to take the hemp on the softening machine, in case it should contain much woody particles sticking to the fibres. At the naval arsenal at Toulon, no hemp is received which is not perfectly free and clean of all woody parts, and, therefore, prepared directly for the heckling operation.

The heckling requires strong and experienced workmen, well acquainted with all the operation. The workshops should be high and spacious, and arranged according to a good system, so that the dust rising from the heckling of the hemp should escape without injuring the health of the laborers, or fall back on the hemp. The workshop at Toulon may serve as a good pattern for such an establishment. Among other conveniences, the windows are provided with blinds, so as to shelter the workmen from the sun, rain, and winds.

At Toulon, and other naval arsenals in France, the skill to manufacture cables and ropes is in a high degree of perfection; there the heckling is distinguished in two different ways—first, divided fibres, (*le peignage en avalage*;) and, second, short fibres, (*le peignage à brins*.)

In the heckling of divided fibres, fibres of all kinds are taken together without distinction, and worked as common or as composed. The heckling of common divided fibres consists in the following: The workman takes a bundle of hemp, and draws the same several times across the comb, changing alternately the ends of the hemp, every time letting escape some fibres, by loosening his hand a little on the hemp. And when the combs are filled with the fibres, the workman takes them out, at the extremities, as above mentioned, puts them together, and ties them in bundles.

In this manner the divided fibres of hemp are separated from the short fibres; but if the hemp should be composed of too much short fibres, then the divided fibres should be combined in heckling. The first fibres that draw out should be laid separately from the shorter ones, and afterwards all sorts together tied in bundles.

The last-described mode of heckling is inconvenient, and the product gives an unequal spinning. Since the year 1839, this mode of work has been abolished in all the French arsenals.

The heckling of the short fibres (*peignage à brins*,) consists in the separation of the long from the short fibres, (or the first degree and second degree, termed first or second *brin*,) according as the hemp is worked in preference to the one or the other, and to the importance of the intended use of the same. This mode is, with justice, preferred to the last described; because it gives a better product, different from the other, of equal, perfect, and strong and long fibres, in one and the same bundle. In France, the divided fibres heckling is now practised in all arsenals. It requires different combs to heckle the hemp for different kinds of cables and ropes.

For threads to make cables or ropes (*fil* [illegible] *carret*) out of, it is heckled on the big combs; still, two kinds of combs are required—the large one for cleaning, (*peigne à dégrossir*;) the other, a smaller, for finishing the cleaning. By experiments, the dimensions of the most useful combs have been determined in Toulon, and are as follows:

Teeth.

The number of rows, in depth, of a comb, 11.

Alternate numbers of teeth in each row, 12 and 11.

Sum of all teeth, together, 127.

Distance from centre to centre of a tooth each way, 0.042 metre.

Width of the comb between the centre of the outside teeth, 0.462 metre.

Depth, 0.21 metre.

Number of teeth in a square decimetre, 13.

Height of a tooth above the board, 0.20 metre.

Side square at the base, 0.01 metre.

The shape of the teeth is a straight-cornered pyramid. The above proportions have proved to be the best, and are now generally adopted. The teeth should be very sharp and pointed, so that the hemp may be drawn and divided by little power. The teeth should be let in pretty deep into an oak board, in oblique lines, (*en quinconce.*) At the square where the teeth are to be set in, the board is covered by a piece of sheet iron, the teeth passing through it. The iron plate should be longer and wider than the square of the teeth of the comb; the teeth should have at least fifteen degrees inclination.

The teeth in a heckle should not be situated in a straight line, because many teeth would come in the same trace of the fibres, and all such teeth have on the hemp no more effect than the one tooth in front; the others would do no service. To prevent this, the teeth should be so set, or divided diagonally crossways, that a straight line should cut from both the corners. This serves for two purposes: the teeth resist better the power in pulling, and part better the fibres of the hemp. In time of use, the teeth become very smooth and dull, and should from time to time be sharpened, or they soon will be bent and out of order.

The heckles or combs should be fixed, and as permanent as possible, on a bench or table, in a solid position. The height of the work table (fig. 8) should not be over 0.86 metre.

A strong workman takes in his right hand a bundle of hemp, and twists one end of it two or three times round his hand, to keep it fast; then lifting with his left hand the floating loose hemp from the other end up, and throwing the same, by a certain motion of his left hand over the comb, (commencing from near the extremity,) and at the same time pulling quick with his right hand the hemp across through the comb, till the extremity of the hemp has passed through the comb, when the motion is again renewed as before, but every time nearer to his right hand, till the comb touches his hand; then the workman changes the position of the hemp in his hand, by twisting around his hand the already cleaned part, and exposes the other to the operation of the comb, as before, till it appears clean to satisfaction, as above described.

The division of hemp, in heckling, is not in all parts of the country the same. By order of the Minister of the Navy in France, a committee was selected, from the most skilful masters in said business, to investigate the most profitable mode of heckiing a bundle of hemp from eight to nine millemetres in diameter, on the before-mentioned combs or heckles. The following is the operation and result:

First. The hemp was first slightly combed; after this, all loose splices were torn off and laid aside. Then the workman took hold in his right hand near one end of the bundle of hemp, and with his left he took some fibres at the other extremity, and, hooking the same on one of the teeth of the comb, by a sudden jerk and pull with his right hand, tore the fibres out from the bundle, and let it so remain in the comb. This operation is continued till all the long and equal fibres are separated from the other; then the hemp is gathered from the comb and equalized.

Second. Then the first degree or long-fibred hemp (*premier brin*, or long *brin*) which remained, and was afterwards gathered from the teeth of the comb, is put together in one regular pile, and immediately tied in bundles, bound together in the middle, and twisted at the extremities; and what remained from this last heckling is the second degree and tow.

Third. Heckled the last, (*à fond*,) the second degree or short fibres of hemp, and tied in bundles, and put it separately from the first degree.

Fourth. Heckled the remaining from the second degree, fibres and splices together; tied them in bundles, the first course separate, and composed of them what may be called the third degree of fibres.

Fifth. Collect the tow and other offals, and then each sort is to be compared by weight.

From this experiment, a good practical workman should produce from the above-mentioned quantity of raw hemp (provided the hemp be of a good quality)—

First degree, or long fibres - - - - - -		78
Second degree, or short fibres - - - - -	10	
Third degree, or splices - - - - - - -	4	
		— 14
Tow and offal - - - - - - - -		8
		100

The first fibres (or the first cleaning) are exclusively reserved for the manufacture of the large cables for naval purposes (*manœuvres de force.*) The second fibres, for the fabrication of the lighter ropes; the third fibres are used for the inner part of the ropes.

To the heckles or combs, used to prepare the hemp for the mentioned lines (*luzin, merlin, bitord,*) and other kind of dragging ropes for the necessary running rigging, are other smaller ones added; and they should have the following dimensions:

The number of rows in depth, 13.

Alternate numbers of teeth in each row, 12 and 11.

Number of all teeth, together, 150.

Space between the teeth in one and the same row, 0.03 metre.

The width of the comb between the centre of the outside teeth, 0.33 metre.

Depth 0.18 metre.

Number of teeth on one square decimetre, 25.2.

The height of teeth, 0.10 metre.

The thickness of the teeth, 0.006 metre.

The shape of the teeth is a straight-cornered pyramid. The other fixings, as the board, sheet-iron plate, the bench, &c., are the same as at the great combs. The heckling is done as follows:

1. The hemp is cleaned upon the great comb, and then heckled on the small combs down to 60 per cent. of the first fibres of hemp, and then immediately tied in a bundle.
2. All that remained in the great comb is collected and heckled; this gives second fibres—tied also separately.
3. Then gather the tow, and tie in equal bundles, as above directed.

The heckling is then in the following proportion: From 100 parts of hemp are produced—

First fibres, the longest hemp	60
Second fibres, or short hemp	32
Tow and offal	8
	100

Sometimes the heckling requires much time, trouble, and experience, if not heckled in the common way. At Toulon, and other French naval arsenals, hemp is received by weight; and each different kind produced by heckling commands a different price, and is paid according to the following:

	Francs.
For 100 kilogrammes of hemp, composed	3.00
For 100 kilogrammes of first fibres, coarse heckled	4.50
For 100 kilogrammes of second fibres	3.50
For 100 kilogrammes of third fibres	3.50
For 100 kilogrammes of tow cleaned	2.00

In the tariff, a heckler is bound to deliver a certain quantity of hemp from 100, which he has to ensure to deliver 92 per cent. good fibres—long as well as short fibres; but they are at liberty to reject hemp, by receiving the same, if they should find the material defective.

The heckler has to deliver according to the following degrees; as 60 per cent. long, and 32 per cent. short fibres. The pay is for 100 kilogrammes, long fibres, 25 francs; second, or short fibres, 3 francs. To animate the attention of the workmen in their troublesome work, a premium is fixed of 10 centimes for every day's work. Such an arrangement deserves imitation, and should be established in Russia also, to improve the condition of the laborer and the product.

The heckling hemp for spinning.

It is no use to heckle hemp so deeply or perfectly for the fabrication of ropes and cables, or to be distinguished by fine divided fibres; then the main object, is to get hemp of perfect texture, strong and durable, but not otherwise. But for weaving purposes, the hemp has to be heckled to the highest degree of fineness. This subject shall hereafter be examined in the chapter "to select hemp, and to prepare for weaving."

For cloth of thick texture, (as raventuch and sail cloth,) the hemp is preferred from the northern parts; the hemp from thence has stronger and more flexible fibres, possessing all the above-described qualities. The hemp should be sufficiently softened by the method before mentioned, then heckled on two kinds of combs—to divide the fibres on the one, and to finish on the other (smaller) the heckling.

The dimensions of the greater comb (*seran*) are the same as described for heckling hemp. The dimensions of the smaller are not all equal in fineness. The comb we are now to describe is the one now mostly in use at the arsenal at Toulon, to prepare hemp for spinning twine to fabricate sail cloth.

The number of the rows of teeth arranged diagonally, crossing (*enquinconce*) to the right depth, 11.

Alternate numbers of teeth in each row, 16 and 15.

The number of teeth in perimeter, straight angled, rounded, diagonally crossways, (*quinconce,*) 2 large sides, 68.

Two small sides, 26.

The number of teeth crossways, 171.

Number of teeth, altogether, 265.

The width of the comb between the centre of the last cross, or diagonal teeth, 0.2 metre.

Depth, 0.11 metre.

On top of the diagonal, 0.173 metre.

Together at the top, 0.220 metre.

Number of teeth on a square decimetre, 98.6.

Diagonal, all above, 120.4.

The height of teeth, 7.5 decimetre.

The thickness of a tooth at the base, 0.3 decimetre.

The comb is fixed in the same manner as that before described. The laborer cleans at first the hemp in taking away all pieces hanging about, which are laid aside. After that, he heckles all the long fibres, leaving all the short, or second fibres, and the tow, in the great comb. The more he heckles, the less will he get of the first fibres, but the more fine and fit for spinning they will be. The finer the fibres are divided in heckling, the more is the quality of the hemp improved for weaving purposes.

After the first fibres have been disposed of, then the second fibres which remained in the great comb are worked. The tow which is collected from both the hecklings is laid separately; and so with the splices, (*bandes.*)

The product from this heckling is divided as follows: From 100 kilogrammes of heckled good hemp are produced—

First fibres	35
Second fibres	57
Tow and and offal	8
	100

Sometimes the first fibres are preferred, in weaving, for the ground or warp; but it is, without exception, used for the woof. From the tow is spun coarse twine, for heavy carpets, covers, &c.

At many places the hemp is not sorted according to the fibres, but heckled as composed and mixed, both kinds together, and then tied. Such heckling (*quenouille*) is sold to the spinners in the country. The twist of the spinning wheel keeps the short and long fibres in a proper splicing, which could not be done by long fibres only; therefore, this kind of hemp is better calculated for the spindle.

If hemp should be required for the purpose of weaving linen for servants' dresses and other compositions, then the hemp is heckled on three combs; the large one before described is one of them, and the small finishing comb. The workman heckles the hemp first on the large comb, in cleaning it from all the splices, which are laid aside. The hemp is then taken on the middling-sized comb, where he pulls out all the long fibres, which are carefully separated and tied, after having been slightly heckled over on the smallest comb.

This is considered the most important operation; in the large comb remained the second fibres; and in the smaller, tow. This last production is cleaned and heckled over with the second fibres, (*court au modesse;*) the tow which is left after this operation in the combs is managed as above directed.

This heckling together will produce, in the first main division of hemp, (*long en rame,*) short fibres, (*court en rame modesse,*) and splices, (*têtes bandes.*) Each is submitted to a separate heckling, and is then calculated to yield from 100 parts of good hemp—

Long fibres - - - - - - - -	35
Short fibres - - - - - - - -	10
Splices - - - - - - - - - -	8
Short tow, (*ètoupes courtes*) - - - - - -	10

The long fibres, which consist now of the very longest and strongest fibres, are submitted to another heckling on the fine comb, in such a manner that they are reduced to only 68 per cent., and are then the first-rate material for spinning, known in the Dauphiné by the name *recolles*. What remained from this operation in the comb are short fibres ; and long tow (*descale*) is regarded as short fibres, and united in heckling. The long tow amounts to 26 per cent.; offal to 6 per cent. The *recolles* for fine spinning are tied in separate bundles ; the other is tied in bales of a conical shape, and then weighed. These are calculated for spinnings of fine twine, from which a superior kind of linen is manufactured.

The short fibres (*court modesse*) are separately heckled, which remained together with tow in the comb, from *recollines*. The heckling of the short fibres is not so difficult as that of the long fibres, and less is paid for the work.

The splices (*têtes*) are also separately heckled. The tow from them is parted from the coarsest parts, tied in bales, and used to make small ropes. The remains from the second fibres in heckling are worked into coarse twine, from which bags are fabricated, (*toile d'amballage;*) and at last, from the short tow, mats to rub the feet against, horse covers, and other things, are made.

In this manner the heckling is carried on to a great extent in the Dauphiné, and the art and skill stand there in the highest degree of perfection, which exposes to view the great benefit derived from a systematical principle in the manufacture from hemp to fine linen.

In the Dauphiné, the combs are not arranged on benches as high as the workmen, but only as high as the knee of the laborer, and are 40 degrees inclined. It has been ascertained that such a position and situation of the comb is more convenient for the workman, so that in this arrangement he may suspend with the inconvenience of describing a great curve with the hemp, to bring the same repeatedly on the comb, and it requires less power to pull the hemp through the comb.

The result of the manner to heckle hemp, as it is done in the Dauphiné, is particularly in the long fibres, fineness, softness, and flexibility of the fibres, little or none inferior to flax, and represents, often, marks of greater durability. Heckling is the foundation of the manufacturing linen from hemp. The difference and the profits should be taken into consideration—the dearer linen from flax on one part, and the perishable weavings from cotton on the other.

Heckling by machinery.

Many experiments have been made to supersede the mode of heckling hemp and flax in the common way, by machinery. Two main points were taken in view: First, to lower the expense of heckling, as it requires a great number of hands; second, to bring the heckling by machinery to such a degree as to be able to supply the demand of the spinning machine with material; which it is impossible to do by way of heckling by hand, unless an immense number of workmen should be employed to supply the spinning machine with hemp: to do this, it would require from forty to fifty laborers.

Among all the machines invented for that purpose, Mr. G. de Sherar's, improved by Mr. Dekoster, has been in progressive use, and is now introduced into all the spinning establishments in England and at Alençon, to supply the hemp-spinning machine. The price of said heckling machine is 4,000 francs.

Another invention of a heckling machine appeared recently, by Mr. G. Garne, of Ghent. This machine is cheaper than Mr. Dekoster's, and amounts only to 2,500 francs; but, till now, only flax could be heckled on the machine.

The heckling by machinery is the most useful and profitable where the spinning is carried on by machinery. In regard to the quality of the product, it is not to prefer before the heckling by hands, as the machine cannot divide the long fibres from the short, and, therefore, gives only two kinds of hemp, (the long fibres and tow,) which are both spun together; but it is more to prefer to have each kind separately, which can only be done by hands.

In places where the spinning machine is not yet introduced, the manufacturers object to the heckling by machinery, and say the machine heckles hemp imperfectly; weakens or destroys the fibres, particularly when the fibres of the hemp are fine and weak; a workman has it in his power to regulate his strength according to the material under his hands, as he pleases. These remarks are correct; experienced and skilful masters watch their interest in this way to employ workmen; say to him that he is able to moderate his strength in correspondence with the hemp in his hands.

It may be remarked that Paris receives more benefit from the improved mode of heckling hemp by hand in their hemp manufactories than from the heckling machine. But it is, as before mentioned, an indispensable arrangement in connexion with a spinning machine, of which we shall further mention.

To refine hemp after heckling.

If it should be required to bring the hemp to a still higher degree of brightness, a peculiar instrument is used, termed a polisher, made out of iron or wood.

The iron polisher (*fer*) is a flat piece of iron, (fig. 9, *a*, *b*;) the width is 3 or 4 inches; the thickness 2 lines, or $\frac{1}{6}$ of an inch; the length 2½ feet; connected strongly with its legs to a wooden block, (*c*, *d*,) by bolts and screws (*e*, *e*.) The lower part of the iron is bluntly sharpened.

In the operation, the workman takes a bundle of hemp as it comes from the heckle, observing to take hold of the bundle at its big end, and lets the fibres all hang their full length; with his other hand he tries to get the lower extremity of the hemp through the opening under the polisher, and then, in pulling both his hands upwards, the hemp is pressed against the blunt-sharpened iron; and, by a continued rubbing motion, exposing all parts of the fibres to equal action of the iron, the hemp becomes perfect.

To complete this operation, the hemp is slightly heckled over on the smaller comb. The hemp assumes a silky softness and a glossy appearance. At Toulon the hemp is polished in this way for the manufacture of small lines, treadle lines, and sail cloth; one laborer can, in one day's work, prepare 12 kilogrammes (30 lbs.) of hemp.

The wooden polisher (*frottoir*) is a round piece of board (fig. 10) of 1½ inch thick, strongly fastened to the same table where the combs are fixed. In the centre of the board is an opening of 3 or 4 inches diameter. The upper side of the board is carved in sharp conical prisms, similar to a cut diamond.

A bundle of hemp is laid across the opening, (*a*, fig. 11,) through which the workman thrusts his left hand, and pulls the big end of the hemp through the opening under the board, and continues to rub with his right hand the fibres of the hemp against the board. By this mode the hemp is more softened than by the before described blunt-sharpened iron; after the operation is finished, the hemp is lightly heckled once more over the smaller comb; and with this, the softening and polishing process is finished.

Many have witnessed the practical operation, and the result of refining hemp to such an uncommon degree; but still it is very little in common use, except at the arsenals of Toulon and Rochefort, and nowhere else in France. In the Dauphiné, where the finest spinning is produced, the hecklers take no advantage of these resources to polish their hemp. Perhaps the nature of the soil and the hemp may be the reason of the softness of the fibres of the hemp from that part of the country. In Anjou it is the same—the polishing tool is never used; but they may have good reason for it, as the fibres of hemp from that part are extremely coarse.

The last remark could be applied to Russian hemp also. The polishing of hemp should be performed with great precaution and moderation; a too hard rubbing may spoil good material.

FIFTH DIVISION.

Of manufacturing cables and ropes.

To work hemp into ropes and cables, is one of the most important fabrications of the raw material, produced in best qualities by the extended industry of Russia. Although this branch of business is, with us, in a high degree of perfection, still some remarks may be desirable respecting new improvements, introduced by mechanical aid in England and France, so as to simplify the manufacture of cables and ropes; but the simplicity of said arrangements cannot draw the attention of our fabricants towards it, if they are ignorant of its existence.

The principal part appears to rest on the skill in the operation itself, namely, the spinning of the threads; and then to work the threads into ropes and cables. The following remarks shall take these two objects into consideration.

The spinning of threads for cables and ropes.

The operation to work hemp into threads is simply to twist spirally the fibres—in such way the threads are made; and of many threads together, strands are made *(fil de carret.)* The quality of the threads depends partly on the tools used in making them; but more from the quality of the material itself, and the skill of the workmen.

The implements used are the spinning wheel, *(rouet,)* the reel, and the rail.

In their construction, the spinning wheels differ one from the other, according to the number of spinners intended to work at once. For small ropes, there is a temporary board with three holes at each corner, situated in a line with the upright wheel, sufficient. In large establishments and arsenals, the spindles are usually situated all on a semicircular periphery above the wheel, so that one strap round the wheel and spindles may set them all in motion. The revolving speed of the spindles depends on the proportion of the diameter between the spindles and that of the wheel.

The following description of such a wheel is taken from one at Toulon, of the following dimensions:

Diameter of wheel - - - - - - -	0.80 metre.
Diameter of spindles - - - - - -	0.03 "
Number of spindles - - - - - - -	12
The difference in motion between wheel and spindles -	26.8

The wheel (F) made of wood, (fig. 12;) the semicircle (D) rests on a pillar (B B) (fig. 13) which slides up and down in a socket of the post, (A,) by the aid of the big screw (C C) which turns in the hollow screw, (E,) and by means of this may be elevated or depressed, to control the tightness of the strap round the wheel and spindle, so that, in turning the wheel, (F,) all the spindles *(g, g, g, g)* be set in motion.

The rails are to hold the threads in the walk above ground, and to keep the threads separate one from the other. Without such arrangement, the threads would touch the ground, and, by the twisting motion, unite with tow, or any other substance coming in contact, which would injure the quality of the threads. At Toulon, rails are used, in the shape of a rake, in the walk or line of the wheel. The distance of the prongs or hooks, one from the other, is determined in the rake or rail by the number of spindles at once in use. All these rails at Toulon have the following dimensions:

Height of the rail from the ground - - - - -	2.30 metres.
Distance between two rails - - - - - -	9.30 "
Number of prongs at the establishment - - -	144
Space between the prongs - - - - - -	0.12 metre.

The threads, by being thick, cannot be wound up on a spindle or spool, as is done in spinning flax, wool, or cotton. Therefore, it is twisted, but not spooled, when the spinner progresses by a backward step, letting the hemp out as it is required to be taken up at every new twist of the thread, and provides little by little till he gets at the end of the walk, where he stops, holding in his hand the thread of about 3,500 feet in length. Now it is necessary to wind the thread up, which is done by a kind of reel, on bobbins or winches, *(tourets,)* which are nothing more than spools on a large scale. Such a bobbin is a very rudely shaped implement, and consists of four boards, fastened two and two crossways by a right angle, by four square or round pins together: in shape it resembles a spinning spool. In small establishments, they seldom have an iron axle through, or a handle for turning. But at the large manufactories at Toulon, Cherbourg, and other places, they are finished in a durable manner, and turn on an iron axle from 4 to 5 centimetres (2 to 2½ inches) attached to a wooden post of the thickness of from 35 to 46 centimetres, (17½ to 20 inches,) moving in two directions. On one of the wings is a bobbin, for changing the twisting by a handle. The handle has to be at the outside, so as not to interfere with the winding up of the threads between the wings, which are from 80 to 85 centimetres long. The space between the cross pieces of the bobbin, where the thread has to be lodged, is 65 to 72 centimetres. It often requires that the bobbins should be carried from one place to another; therefore, they should be numbered or marked. At Toulon the average weight of a bobbin, with greased thread on it, is not over 6.40 lbs.

The spinning itself, or the twisting of the thread, is a very simple performance. The large spinning wheel is set in motion by hand, or by horse or steam power. And when the first spinner has girded himself with hemp round his body, sufficient in quantity for all the length of the thread in the walk, he makes of his hemp a small loop, and slips the loop on the hook of the centre spindle, which is higher than the rest. The hook and spindle turn by the strap of the wheel, and this twists the loop on the hook. The workman at the same time measures and begins to retire from the wheel, and lets go with his left hand the required quantity of hemp to be twisted by the hook; with his right hand he collects all the ends of the hemp that appear, and hides them between the twists of the thread already twisted, and presses his hand over the thread with a rubbing motion in following the thread, (fig. 14.)

In this manner, the workman gives no time for the thread to become compact and curl into knots. By letting out of his hand more and more hemp to be twisted, he proceeds on; and, in passing one of the rails, he lifts up the thread in his hand, and puts the same on the rail in the proper place, between the prongs, or on a hook.

After the first spinner has proceeded in this manner to a proper distance, two other spinners commence, one at each side of the first thread already at work, in making a loop of hemp, and slipping the same on the next spindle hook, and proceed in the same manner as the first spinner had done before.

As soon as the first spinner has come to the end of the walk, and finished his line, he gives a signal; when another workman at the wheel takes off the thread from the hook of the spindle, and fastens the thread to a small block fixed on the ground of the walk; after this is done, the spinner wraps some tow *(livarde)* round the end of his thread, and puts a stone on it. The other end is then tied to the bobbin, and the bobbin is started by the machinery of the wheel. One laborer only is required to attend to the bobbin, and usually a boy; but much attention should be paid to this operation, that the thread should be wound up even, without crossing. To do it right, the boy has in his hand a small spade, beating all the time on the thread, to equalize the same by stretching of the thread with the jarring blows, and the stone at the other end *(livarde)* is dragged after: by this operation the thread is bobbed in good order.

In time, the thread is nearly all on the bobbin; the first spinner takes up the end, and advances towards the wheel; takes the thread from the second spinner, who in that time has also finished his thread, and ties the ends of the threads together, leaves the threads to be bobbed, and he (the first spinner) commences at the hook of the spindle a new thread, and the operation is repeated in succession, with the continuation of the work. After the bobbin is filled with thread, it is disengaged, and stored in a warehouse for further use.

To carry on the manufacture of thread to a great extent, it requires a sufficient quantity of material of good quality, and skilful workmen.

The selection of hemp to fabricate cables or rope from it, should be taken seriously into consideration. In neglecting this important rule, great misfortune may be the result; and how often has not the safety of men and ships to be dependent on it! Therefore, a fabricant should be very careful, and turn all his attention towards the subject, to procure and select the best material for the manufacture of cables. And only hemp from first fibres should be used to all the more important works, and second fibres, separately, for such ropes as are less exposed to stress.

Further: the thickness, the degree of twisting, or number of spirals in a given distance, and of a given quantity of thread, should also be noticed for the selection of hemp from which the cable has to be composed. The table hereafter, used in France, determined, by experiments, the dimensions of untarred or ungreased threads to be the best.

Untarred threads.

	First fibre.	Second fibre.	Third fibre.
Diameter of threads - metres	0.008 and 0.009	0.008 and 0.010	0.012 and 0.014
Twists or spirals in 1 metre - No.	60	60	65
Weight per 100 metres - kilo.	0.50	0.65	0.80

The proportion of these calculations gives the dimension for the spinner; but it is difficult to obtain the required spinnings, unless it should be produced by particular skill, of a distinguished quality.

But in all cases thread for cables should be substantial, smooth, and extremely even. And this is not all: it should be without lumps, or any woody particle. In the operation of spinning, the workman pulls some fibres of hemp in the direction of *a*, *b*, (fig. 15,) in letting some fibres loosely at the side, as *c*. After this, the spinner has carefully to watch the time for splicing the fibres of *a*, *b*, and, at the same time, to lengthen the twist; then, when the fibres (*c*) turn round the first short twist, at *y*, (fig. 16,) the fibres (*a b*) remain; the centre thread, after it is spun over, may sustain a much greater power. But, if short twists should be given at *y*, it soon will tear, and the cable is not to be depended on. It would be still worse if the centre piece should be formed in drawing the fibres horizontally. In such a case, if the rope should be composed of three-fourths all hemp, the balance but threads, then it may sustain three-fourths of all the weight; and, if more should be added, the strength will increase also.

But, on the contrary, if the fibres of hemp should be equally twisted, there is nothing in the way that one fibre or particle should be as much stretched as the other—they resist equally in one and the same direction. To obtain the desired quality of cables, the twisting of the threads should be particularly attended to.

It is a great advantage to use the list (a piece of cloth) for smoothing the threads in time of spinning, which the spinner holds under the thumb of his left hand. At Toulon, the list is soaked at the beginning of each thread.

The dampness softens the hemp, and varnishes the surface of the thread which appears smooth and even; but it cannot be used in cold winter time—the dampness may injure the threads.

The hemp for twisting or spinning should be of an equal degree of dryness, so that, after twisting the fibres, it should remain in the same position without shrinking. Therefore, the hemp should be as much as possible of one and the same making.

An important question is to be answered, in respect to the degree of twists in a thread to sustain the greatest power; too much twisting makes the thread defective. If a rope shall have the required strength, it should be so twisted that the power of resistance of all fibres should range amongst themselves equally in spinning of the fibres, each to bear equally, and no more nor less. But such a particular degree of twist would hardly be practicable; then, all fibres of hemp have not the same degree of strength and flexibility.

On this subject Mr. Gaboty (rope manufacturer) has published the following remarks: That the threads should be coarse and strong, the twisting moderate, so that it should not lose the elasticity. Unequal twisting impairs the strength of the fibres; but if the hemp should be tender and elastic, then the thread should be more exposed to twist.

At the naval ministry in France, experiments have been made to ascertain the facts. They used a dynamometer of 2,000 kilogrammes. The stretching was arranged as a lever, on which the thread was fastened; the fracture of the threads was to be seen at the lever, and the strain was extended to a distance of 6 metres. The experiment gave the following result:

Threads (not greased) of nine millemetres, (the hemp being from Anjou, of 1st fibres.)

Number of twists in one metre.	Did sustain a power of	Weight in grammes of a metre thread.	The strength of one gramme hemp.
No.	Kilogrammes.	Grammes.	Kilogrammes.
38	45	5.1	8.8
40	52	5.1	10.1
54	100	5.8	19.2
57	95	5.0	19.0
60	86	4.3	20.0
75	95	5.26	18.13
80	110	6.2	17.7
82	60	6.6	9.1
88	40	6.33	6.2
92	60	5.83	10.3

From the above table, it appears that threads of 8 or 9 millemetres of hemp from Anjou, of 1st fibres, of 60 twists in one metre, possessed the most strength; in 2d fibres, it is deemed the same twist to be the best. By this it may be proved that a rope or cable will be weakened by twisting the thread too much.

Before we close the remarks on this subject, it would not be out of place

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to mention the experiments of spinning threads, for cables and ropes, by machinery. A real spinning machine, to manufacture threads from hemp, acting independent of the assistance of the workmen, is kept up in England; and two fabrics are in operation—one at Hull, and the other at Newcastle. The agent of the Finance Minister and Counsellor of State, Chamberlain Baron A. K. Meiendorf, visited these establishments in the year 1839, and made a favorable description of the same; the result of his information was communicated to the journal of the manufactory in the home trade in 1840. It appears that the ropes made from threads which were spun by machinery were 24 to 30 per cent. stronger than those fabricated in the usual way. It would be very desirable that such an important improvement should find some imitation amongst our manufacturers.

France is indebted to G. Huber for the invention of a small spinning machine, very ingeniously arranged. The trial was first made at Toulon, and crowned with success. The threads spun by this machine are 20 per cent. improved in strength after being worked up into ropes. The machine is so constructed that the threads are greased or tarred in the hemp, which makes the threads extremely smooth and even. The price of said machine is only from 200 to 250 francs. But, at the same time, it is to be observed that Mr. Huber's machine is only a mechanical assistant, but not a mechanical spinning machine, independent of the assistance and action of the spinner. Therefore, at Toulon are these machines intrusted only to the most skilful workmen. It was proved, by a trial, that from 15 to 20 per cent. was the gain in threads by this great machine, and it assisted the workmen to equalize the first threads on the walk. A point of great importance is, that Mr. Huber's machine occupies the least space when in operation.

The tarring of threads for cables.

Grease or tar is necessary in the manufacture of cables, to protect the threads from dampness. Tar makes the material compact and binding. Before the use of tar, it has to be first made fluid; and this is done by raising the temperature high enough, so that the submerged threads may be in all parts equally penetrated by tar, and after this may be easily wiped off.

The threads that have to undergo the operation of tarring should be highly finished; and it is well known to be an advantage to have the threads tarred as soon as they come from the spinner, and then to be bobbed. This mode of operation is now adopted in all naval aresnals in France. It may be useful to give some description of it. The drawing represents the machine and application, in all its parts: (A) showing the steam boiler and the inside of the furnace, (figs. 17 and 19.) The steam that is formed passes through the valve (C) and pipe (B,) and is then passed between the two kettles, (K L M O and K Q O, fig. 18.) The temperature of the same is communicated to the tar in the kettle, (K Q O.) The water from the condensed steam returns back to the kettle by the pipe, (F G,) which passes through the open valve (H.) The pipe must terminate under the surface of the water in the kettle; by this the condensed steam will return every time the tar kettle is exposed to steam.

The heating of the tar is immediately under the threads that pass through the kettle; the heater (E) is constructed from one side of the kettle (K Q O) to the other. This addition is an important one—the tar is to be heated before the first threads are drawn. Fig. 21 represents the manner in which the heater (E) should be connected with the said kettle. The valve (e, f, h) is fitted at the side of the kettle by flanges, (*a*, *b*, *c*, *d*,) and wrapped over with thread. In this manner it is secured, that the fluid should not come in contact with the valve, which would soon be corroded from the acid contained in the tar. And, for that reason, it is necessary to have at least one kettle for tar and boiling water made of copper. The boiler at the outside may be as well constructed of sheet iron. The threads that have to undergo the immersion in tar have to pass under the sheet iron strap (*x*.) The letters (*p*, *p*, *p*, *p*) represent threads of hemp, or, hair cloth, (*livardes*,) on which the threads are stretched and smoothed.

The iron boiler is surrounded by a wooden box; the space between is filled with dry ashes, or dry clay. This is sufficient to retain, throughout the night, the tar in a fluid state. The opening (R) in the iron boiler *is to* observe the space between the two kettles, to discover if any leaks of the tar boiler should be visible; the said opening is covered by a lid. The stopcock (H) is to open, (*j*,) and to examine the color of the water—a black reddish color indicates the presence of tar.

In the said fabrics are the fireplaces of the steam boiler, so constructed as to prevent all danger; dry cord wood is used as fuel.

It is important that the threads should take no more tar in than necessary for their preservation; any surplus would only increase the weight of the threads, without any advantage.

At Toulon it was ascertained, by experiment, the quantity of tar necessary in examining the fibres of the hemp, from which threads are spun.

The weight of tar amounts in 100 kilogrammes of tarred threads as follows:

First fibres, from 8 and 9 millemetres,* to 12 kilogrammes.†
Second fibres, from 9 and 10 millemetres, to 16 kilogrammes.
Third fibres, from 12 and 14 millemetres, to from 18 to 19 kilogrammes.

After the threads are removed out of the tar kettle, they should be wound upon bobbins, as before described, and the threads are to pass by this operation through a piece of hair cloth, (*livarde;*) the number of turns determine the quantity of tar to be used. The *livarde* should be so constructed that it may serve to finish the operation; such a precaution is of great importance. Then from the *livarde* the threads imbibe the necessary quantity of tar; but should the *livarde* contain less tar than it ought, then the threads soon will be confused amongst themselves, and become flattened, by turning over in the reservoir of too little tar; and to supply the *livarde* anew, makes the threads spotted at the surface, and uneven.

The winding up the threads on bobbins.

Threads that have been wound upon bobbins, as before remarked, should be stored in a magazine, according to the different number of the threads. The construction and situation of such a magazine or storehouse should be perfectly free from all dampness, and should be airy and spacious—should be often opened to the access of air in fine and dry weather. Each bobbin should be provided with a mark, on which the weight and the quality are written, and to be sorted in the following manner, viz:

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* One millemetre is equal to 0.3937 inches, English.
† One kilogramme is equal to 15,444.0234 grains, English.

1st. Threads of first fibres never to be mixed with those of the second or third fibres; and

2d. To arrange them so that it may at once be seen what quantity of threads the storehouse may contain.

To unwind the threads, in the further operation, from a large bobbin to others of a smaller diameter, is done by putting the bobbin between poles, (*à rebrousse poil,*) an arrangement necessary to that purpose to prepare the threads for cables or small ropes; in passing and drawing them through the tube, (or trone,) the fibres regulate themselves, and become smooth and even, without the danger of becoming entangled.

The winding the threads on the bobbins is done by the assistance of a machine, put in motion by hand or any other power. The arrangements of the bobbin wheel in Cherbourg, Loraine, and Rochefort, now in use at the arsenals, is decidedly the best, and is distinguished by its simplicity and utility, so that the threads are not confused in the bobbing operation.

(Fig. 22.) The machine consists of two elastic planks, (*s j* and L K;) the axle is between them, situated in a diagonal direction, on which the main wheel (A B) is fixed; on the rim of this wheel are two gutters or grooves cut, for the string or strap to run in. The bobbins (T T) are fastened on wooden axles, (V V,) running in iron rests. These bobbins are parallel with the before-mentioned axles of the big wheel, between the planks, (*s j* and L K,) which are kept at a proper distance one from the other by the cross pieces, (M N and P Q;) but by screwing C D and G F by the lever, (E H,) the ends of the side planks may be drawn nearer together, so that the bobbin is kept with the axle to turn round on the rests, in its proper place. On one end of each bobbin is a small drum or pulley (*a a, b b*) fixed, on which the string or strap from the rim of the main wheel passes, and sets the bobbin in motion. To prevent the rubbing of the bobbin from injuring the sides of the planks, such parts are secured by sheet-iron plates (R.) By turning the crank, (X,) the wheel and the bobbins are set together in motion. As soon as one of the bobbins is filled with thread, it is removed from the frame of the wheel, by unscrewing C D, when the ends of the planks will part, and the bobbin be disengaged from its rests.

Threads bobbed in this way will answer all purposes. On such a machine may be bobbed in one day from 900 to 960 kilogrammes (more than 2,280 lbs.) of threads. The management requires two hands—the one to arrange and straighten the threads, the other to turn the crank.

The work is done with more ease if the opposite bobbins are kept pretty nearly equally loaded with threads.

To draw up the threads for cables.

In spinning, the hemp is exposed to a twist which tightens and presses in the fibres of the thread together, and the strength or resistance is created in pressing of each fibre on the opposite one; but if thread is left to itself, free, after it is spun, it soon will untwist by itself, and assume the position it had before twisting.

The letting out, or warping, (*commettage*) consists in the following operation—that many threads may be united in one whole, called a strand, which then cannot untwist by itself.

Such an arrangement is distinguished in three different ways of warping (*commettage,*) or single or half haul, as double or whole haul. The asisting commettage, or single, where the strand is made of two threads (*bitord;*) and of three threads (*merlin.*) The double or whole haul make strands, (*aussières,*) composed of three or four threads, or makes strands of two, three, to twenty-four and more threads in each; and, lastly, the whole haul in a cable contains three and more strands—each of these, three and more lines of from two to two hundred threads.

The operation of *commettage* includes the formation or warping the threads or strands.

The work itself, to warp the threads, is the most important business in the operation of rope making. It gives the threads the first form to be fit to compose cables out of them, and distributes the strength equally through all the threads, which a cable has to resist, in dividing, with the utmost precision, the strain equally amongst them all.

It will be found useful to find here the description of the mechanical aid to separate and to warp the threads, as it is practised now at Toulon and at other French naval arsenals. The machine known as the carriage of M. Huber (*le chariot de Huber*) is preferred of all others.

(Figs. 23 and 24.) The carriage of M. Huber consists of a wooden frame on three wheels. The main machinery is included in the said frame, containing the cog wheel (C) of 81 cogs, which matches in the bevelled wheel (D) of 14 cogs; on the further end of the shaft is a hook, (E,) on which the threads are to be attached—as many as are required.

Further on the shaft (D,E) a small spur wheel (S) is fixed, which matches in 4 other small wheels, (F, F,) so that 4 threads or strands may be attached to the carriage. The shaft (E, F) (fig. 25) has a projection at F, which presses against the iron plate, (Q, Q,) and the friction balls (P, P) confined in the box (R, R.) The diameter of these balls is less than the space in the said box. This arrangement lessens the friction considerably.

One end of the line is fastened to one of the spinning wheels, and passes once round the pulley (B,) which is placed on the upright shaft (A) of the cog wheel (C.) The dragging line (*corde de halage*) operates to pull the carriage forward, and this sets the hook (E) of the main shaft (E) in motion. The pulley (B) is ten times larger in diameter than the tube (H) to which the dragging line is connected, and is marked on the drawing by the letters $ff, ff^2, g^3, h\,h^1, h^2$; f^1, the rest or dead part of said line; h^2, the dragging part, to which the girths are attached for the workmen to take hold of. To part the two parts of the scourge, the loose pulley (Y) is shifted (*poullee folle.*)

The carriage is kept unchangeable in its track by the other direction line, (*corde directoire,*) which is fastened at both its ends on the working frame, and forming a dead circular line round the other groove of the block or pulley, (B,) to which also is joined the dragging line. The direction line has still another purpose—to shift from the loose or dead pulley. It assists the pulley, (B,) and prevents the dragging line from becoming entangled. The arrangement of said line is marked by the letters $d, d^1, d^2, d^3, d^4, d^5, d^6, d^7$.

When the warps are made of thick spinnings, the dragging line is then fastened with its dead end to the carriage, and has to be always so arranged that the capacity be twice to the pulley (B) in proportion, so that the diameter be 20 times larger than the diameter of the tube (H.) The direction line should not change the speed of dragging; and, therefore, the diameter of the groove at the pulley, (B,) at which the dead turn is fastened, should be one-half as large as the before mentioned.

If threads have to be spun, which are on bobbins, then they are distributed between boards, and the threads are drawn through holes made in the admitting plank (S.) These openings are made and divided into parallel arches; in the centre of the arches are holes to admit the centre core, or centre thread. The number of holes in the said arches increase in an arithmetical progression, which has to its first number 7, as follows: 7, 14, 21, 28, 35, 42, 49, 56, &c.

The centre thread serves as the core for all the other threads, which are distributed in the arch, according to rule, through the pierced admitting plank; from thence all threads have to unite round the core in the tube, (H,) where they, in entering the tube, are compactly pressed together, each thread in its proper place, and twisted before it leaves the tube. The support frame (J, K, L) is fastened together with the plank (I) by the screw, (M, N,) by which the frame is drawn to or from the tube (H.)

The carriage has only one wheel in front, of very light construction, and is easily managed.

The use of this machine is convenient in the extreme, and at most of the French arsenals it is drawn by laborers; but the application of steam power would be still more preferable. At Toulon, horse power is used. After steam power, horse power is recommended instead of the mode now practised in Brest and Rochefort—viz: harnessing men for that purpose.

The threads become shorter in twisting. It is therefore very important to take threads of the proper length; and it is likewise of importance to select the proper diameter of the tube (H) through which all the threads have to pass, so as to correspond with the thickness of the required rope or cable, in considering the number of threads to correspond with the circumference or thickness of the latter. The circumference differs according to the required size of the cable or rope, and is determined by the number of threads.

Mr. Huber's machine, before described, contains, at the admitting plank in the arches, the division of all the required diameters or dimensions of cables and ropes, in the number of threads, in the length of 200 metres, (near 219 yards.)

The name of cables or ropes.	Length of thread.	Diameter of tube.
	Metres.	Metres.
For 200 metres (*ralingue*) - -	225	0.175
For outside strands (*aussière*) of 3 and 4 threads - - - - -	245	0.175 & 0.15
Ropes (*grelin*) of 9 threads - -	260	0.091
Ropes of 12 threads - - -	275	0.075

NOTE.—A metre is equal to 39.37079 inches, English.

The invention of Mr. Huber's carriage is an important improvement in the mode of warping the threads for cables and ropes. The manufacturers in our native country should take some advantage of it, as not only the quality of cables and ropes is improved, but it shortens the labor, with great economy.

The warping of strands and scourge.

The termination of warping strands and scourge is as follows: First simply, because only two or three threads are joined together in twisting, but not, as usual on a spinning wheel, from the right to the left. In warping, it is, on the contrary, from the left to the right; therefore, it is to be understood that, in the composition of a scourge, no threads or strands of the before mentioned are used.

The spinning wheel above described is commonly used for forming the scourge of small ropes, but it is not strong enough to manufacture ropes of a great diameter (*aussières.*) Only two hooks are used at the wheel to compose a rope of two threads. If more should be used, they are drawn one after the other, and fastened to a ring in a post which is situated at a proper distance, equal with a scourge. Usually, when laid out in whole hauls, the thread is doubled through one and the same ring in the post; and this mode is more proper than to take two different threads. The twist in two different threads can never be equal in the number; and these arrangements are adhered to in the composition of all small and large ropes.

After the scourge is arranged, the master workman takes the threads from the place where they were united at the post, and fastens the same to the looper (A B) (*émérillon.*) This (fig. 26) consists of a hook (*a*) with a prolonged axle, (*b*,) which turns with ease in the tube (*c*, *d*, *e*, *f*;) at the other end of this tube is an oval ring (*g*) in which the hook from the rope of the sledge (*chariot*) is fastened; the sledge is more or less loaded with stones, according to the required resistance.

The workman takes hold of the top, (fig. 27,) *toupin*, *cochoir*,) (C D,) puts the same between the two suspended threads in such a manner that the diameter of the two opposite excavations (*h h*) catch and retain one thread in each excavation, so that the end of the top (*i*) nearly touches the hook of the looper (A B;) after this is arranged, the workman gives the word to commence the turning of the wheel, by which the threads are still more twisted. After finding that the threads are sufficiently twisted, the workman pulls further off, by degrees, the top (without altering the position) from the hook of the looper, (A B,) and proceeds gradually further, when all the time the wheel is kept turning. The threads, by drawing the top further back, untwist; and by this the two threads will twist one over the other, and form a strand, which cannot untwist by itself, similar to common thread. During this process which is going on, the sledge where the revolving hook is placed advances in proportion to the speed of the wheel and the twisting of the threads.

The strands (*bilord*) should be formed as soon as the thread leaves the spinning wheel. The advantage of this is well known to perform it till the fibres possess the required elasticity, and then it requires less twisting afterwards in the scourge.

To form merlin of three threads, the process is the same as before mentioned, with this difference—that, instead of two threads, three are fastened to the looper of the wheel, and the top has, of course, three excavations.

It requires, to obtain the best quality of ropes, to select threads of one and the same thickness, strength, equal expansion, and equal twists. To threads for warps of common ropes the rule makes an exception.

At Toulon they use a substance to grease the warp in the beginning, and calculate for the shortening of the threads in letting out 20 per cent.—*i. e.*

threads of 120 metres long will give strands or lines of 100 metres in length. The spinning wheel is two metres in diameter, (equal to 6 feet $\frac{56}{100}$ inch,) and the spindles (*molettes*) 4 centimetres, (equal to 0.1 $\frac{57}{100}$ inch.) The sledge, in letting out, is loaded with ten kilogrammes, (21 lbs.)

The arrangement of the wheel for letting out the scourge, in Cherbourg, is considered a very useful one, and is constructed (see figs. 28 and 29) with four spindles, and set in motion by the big wheel (C.) The axles of those spindles are placed on a cheek board of a peculiar form, which can be sufficiently understood by inspecting the drawings. The frame of the cheeks sliding to and from on the frame of the wheel, which is composed of two square timbers, (F F;) the sliding frame is moved by the screw, (E,) and serves to regulate the strap from the big wheel (C.) The diameter of the wheel is two metres.

For the fabrication of small lines, it requires another frame of cheeks, which is supported by four iron bolts, (*h, h, h, h,*) and is placed on the large cheek frame, (D,) with the iron bolts resting in the notches of the former cheek frame.

The letting out strands of threads.

In the operation with Mr. Huber's carriage, the letting out is called "composed," because the threads which are warped are transferred to the opposite side to be twisted—*i. e.*, from the left to the right; and the others are let out from the right to the left. For letting out and warping are required—

First. A fixed swivel stand (iron jack—*chanteer*) on which as many hooks are arranged as there are threads in number.

Second. Another movable stand (second iron jack—*carré*) on which is one large hook, to which all the threads are fastened that are to be let out.

Third. One or more sledges, loaded with the proper weight, to regulate the motion of the movable iron jack. The slow motion of the sledge, by the friction on the ground of the ropewalk, determines the speed by which the lines have to be let. And

Fourth. Of small sledges to support the tops, (which are distinguished from the tops before described, to be large, heavy, and at many places excavated) which are as many as there are threads intended to be let out.

To operate with the machine, the tops are distributed in their proper places; then the thread is carried to the revolving jack-hook, and to the stationary iron jack, so as to communicate to the threads; the preliminary twisting, which shortens the threads that are fastened to the revolving jack and the sledges, are dragged forward till they approach to the stationary jack stand at the required distance.

After the threads have been sufficiently twisted, they are removed to the twisting top on the sledge, (*e e*,) supported in proper distance from the tops at the revolving jack-hook on the stand; the threads unwind themselves, and by this join together and form a perfect rope.

In very thick ropes it requires that the warp has to be twisted in the contrary direction to the threads. The thread selected for that purpose should possess strength and elasticity, or the inclination to untwist itself; if not, it surely would prove injurious to the strength.

The speed of the excavated top should at all times correspond in proportion with the speed of the sledge; so that in giving time, and in advancing by degrees, or detaining in short intervals the advance of the top; a pretty equal distance may be preserved.

To determine the quality and the length of the threads for the composition of ropes, as well as the formation of the warp, is considered a different branch in the business in rope making. Then to measure the threads of a cable or strand, a particular gauge is required, made out of parchment, and divided into inches and lines, (or parts of an inch,) on which the above-mentioned length and thickness of the threads are fixed. This mode is adopted in France, in the formation of ropes of any given length and thickness.

The sledge should not be loaded by guess, but should be in proportion to the determined shortening of the threads by twisting, to hold them back by a certain resistance in the progress. If the sledge should be very light, then the threads would not be sufficiently stretched; in consequence, the ropes could not be let out equally. Contrary to this, if the sledge should be too heavily loaded, it would require much more twisting of the threads to drag the sledge forward. It was before remarked, that the most strength of a rope depends on a certain number of twists in a certain length of the threads; and this determines the load of the sledge in the right proportion. Mr. Havot advises to load the sledge with three times more the weight than the suspended threads weigh.

To compose cables from strands.

Strands are composed of threads, but cables (*grelins*) are made out of strands (*aussières*) of three, four, and more threads. There is a difference between strands from which cables are made, and such as serve directly as riggings or tackling strands; in reality, these are more twisted than strands to form cables of it. It is let out in whole haul as above mentioned; and they consist, first, of yarn that is twisted into threads, rights (to the left hand;) second, three or more threads forming strands, from the left to the right hand; and to the last, third, from twisted strands from the right hand to the left.

The machine for letting out to form cables and to make strands differs only in the burden on the sledge, which has to be more loaded for cables, and requires more workmen and power to put the crank of the movable and stationary iron jack in motion.

In parts where the skill in rope making has already so much advanced as to use machinery for warping the threads, the ropes have gained considerably in durability and strength over such ropes as are manufactured in the common way. If spinnings, consisting of parallel threads, were stretched in a straight line, they would not possess strength in comparison to their thickness. By twisting them together, the strength is increased; and then, in proportion, the number of threads may be decreased.

The above-mentioned machine for warping or letting out the threads gives a more preferable product of strands (*aussières*) to compose cables. This superiority may be traced to the mode now preferred to warp in whole haul.

Numerous experiments in Toulon, and in other parts of France, have established the fact that the cables made in the common way are one-fourth weaker than those cables composed from strands; and in the French naval use are now cables composed of strands warped in whole hauls.

But if cables should be required for mechanical purposes, then the warp of threads may be more usefully applied than the other; but where the riggings have to stretch without the danger of breaking by rubbing or friction, this will be better sustained by ropes composed in the ordinary way

The said machine is so arranged as to spin the thickness of any given diameter of common thread; and the number of threads may be increased to correspond with the arrangement of the machine.

SIXTH DIVISION.

The spinning of hemp.

Hemp is converted into threads by means of labor performed by hand and by machinery.

The first method is every where known, and we have but little to remark on *that* subject. The spinning wheel should be compared with the spinning done by machinery, which could be with ease introduced into Russia.

Spinning hemp by hand.

The tool used in spinning hemp by hand is also known by the name of spindle, &c. The use of these tools to spin hemp is every where intrusted to females—though it is strange that this machine, so simple in its construction, should have been, until lately, very little known or used; and to this very day, in most parts of Europe, they are perfectly ignorant of a method to prodce thread and twine of hemp. The hand spindle has but little the advantage now, even over the machine spinning wheel, in producing the best twine for sewing and shoemakers' thread, &c., made out of hemp.

The rotary spinning wheel is too well known that it should be particularized by description. The remark may suffice, that it does not speed the spinning business, and requires the greater part of the time of the females to attend to it; but the rotary spinning wheel produces good twine, and particularly for sewing.

The rotary spinning wheel is an important improvement on the spindle, &c., and is now mostly adopted in France and Germany for the spinning of hemp.

The rotary spinning wheels are distinguished by their different constructions, and the manner in which they are put in motion; for some are turned by hand, while others are put in motion by the foot of the spinner. In the usual construction, they consist of a very light wheel of 20 or 24 inches diameter, which is turned by a crank, either by the hand or foot of the spinner. The wheel has, at the rim, a groove, in which a string or strap is carried, to connect and give motion to the horizontal spindle, which is provided with a grooved pulley, and connected between the same posts or planks on which the axle of the large wheel rests. On the above-mentioned horizontal spindle are fixed two flyers, provided with a hook; on the same spindle turns loosely the spool, with the other pulley, where yarn winds up in spinning. The one end of the spindle and fly has a loop or tube through which the thread passes from there over the hook at the flyer, and then fastened to the loose spool. By turning the large wheel, the string or strap from the rim of the wheel will set the spindle and spool in motion, and, by this simple operation, the thread forms by the fingers of the spinner. After sufficiently twisting, the same is wound upon the spool at the will of the spinner.

The greatest skill of a spinner, with the spindle only, or revolving spinning wheel, consists in practice, that no more hemp is taken and pulled by the spinner from the rock than is necessary to give the thread the proper thickness and equality in the twist. The beauty and quality of the thread depend too much on the skill and patience of the spinner; the want of which often produces the worst thread from the fibres of the best hemp.

The combination of the above-described rotary spinning wheel, as mostly in use, possesses important imperfections. Threads that pass through the loop or tube of the spindle, then over the said hook, from where it is wound up and collected on the spool, are piled up from one point, by which the twist in the same thread will differ one part from another; and, consequently, the strength of the thread will differ accordingly.

To correct this imperfection, it has been long in contemplation, instead of having one hook at the flies of the spindles, to place a number of metallic hooks where the thread is shifted from one to another, when necessary; by which operation the thread is equally spread in winding it upon the spool. But it is evident that the spinner must stop his wheel in order to accomplish this, and, consequently, much time is lost.

The rotary spinning wheel, so much in use, is now superseded by an improvement invented in England, where the thread is very regularly wound upon the spool, of equal thickness, as it comes from the fingers of the spinner, without stopping the work to shift the thread.

The description and drawing of said spinning wheel are as follows:

(Figs. 30 and 31.) It consists of a horizontal wooden floor-piece, (A, B,) on which are erected two uprights, (C, E and D, F;) in the middle of these uprights is the axle (P, Y) belonging to the wheel, (G, H;) above this is another axle, (C, D,) which turns in supporters of leather, and has a pulley at one end. A spindle, (K,) which turns easy on the axle (C, D) is, at at one of its ends, provided with iron and a similar pulley, but the diameter is a fourth less than the former. One and the same thread or band sets both pulleys of spindles and axle in motion; but, owing to the fact of the spindle being a fourth less in its diameter, it will turn a fourth faster than the axle (C, D) in the same length of time. The loop, or tube, in the axle, is extended the whole length of the movement; so that the thread may pass through the whole length of the tube. The lever (N,) which is placed on (O,) and catches with its forked end the head of the spindle, and, by a pinch, gives it a forward and backward motion, from the eccentric wheel or camm, (M,) connected with the cog wheel and the endless screw (Q.) The spring (R) is so arranged as to press the lever (N) towards the endless screw (Q.) The head of the loop tube, and the place at the pinch, are pierced; through them passes the thread, which proceeds over the hooks to the spool, where it is regularly and equally wound up, in proportion to the speed between the axle and spindle or spool. It is the treadle (S) by which the large wheel is put in motion. The rock (T) is where the hemp is fastened.

We have remarked improvements of importance of the improved skill in spinning hemp. But it is equally important to give some account for imitating the Russians; of the progress of weaving in hemp in England and France, where it is practised to great extent with the cultivators, who have embarked in the spinning and weaving business with great success.

In France, the spinning of hemp by hand is chiefly executed by peasants. The peasant employs most of his or her time in this branch of industry, and it appears to be preferred to the cultivation of the soil. Each farm, each cabin there, where they have embraced the business, seems to be, in reality, in a state of manufacture. Females and children spin hemp. Much of their spinning is used for weaving, (of which we shall speak hereafter) Where the nature of the country produces hemp, the arrangements are all similar; and the product is converted into sail cloth and other manufactures.

The manufacturer is not obliged to keep particular work hands for spinning there, but he gives his hemp to the peasants, who work and spin the same; and he pays for the work after spinning, according to the quality of hemp and the quantity of threads.

In Anjou, each manufacturer has his own receiver, whose business it is to receive the threads by weight, and to examine the quality. The expense of threads spun by hand is not considerable; but a higher price is paid for that spun by females, by way of encouragement to take more pains to improve themselves in spinning. The average price is about 3 sous (about 4 cents) per pound for threads intended for strong weaving; and 5 sous (6¼ cents) per pound for threads for rigging. A spinner who is industrious can, in one day's work, spin 10 lbs. of yarn for the loom, which is worked with less care than the threads intended for rigging; because, for the last purpose, the threads require more strength, and must be smooth and equal in all parts—which is considered not more than 6 lbs. for a day's work.

It should be remembered that too much twisting is very injurious to the threads. The thread spun by females is much more preferable to that spun by men. The first, among other advantages, is nimble and elastic, and does not run together in twists.

Those fibres of hemp that are very dry should be moistened during the operation of spinning. They commonly use saliva for that purpose; being a little sticky and warm, it imparts to the thread the desired smoothness and nimbleness. But this practice is very injurious to the health of the spinner; for, when the work is carried on from 8 to 10 hours a day, the loss of saliva will be considerable, and apt to produce pain in the breast. Experienced spinners usually provide themselves with a vessel of water for that purpose.

But clean water is by no means a substitute for saliva, to give to the thread the desired property. To remedy this, several methods have been devised. Professor Hermstadt advises to use a thin and slippery decoction of *symplytum officinale*, or *semen psilli*. In Nantes, Mr. Liekler (the well-known inventor of the rotary spinning wheel with elastic springs) found that steam softens the sticky substance, which still adheres to the fibres of the hemp, and causes the fibres of the hemp to be more fit to unite in twisting, and prevents the sterility in weaving, *(toiles creuses.)*

Therefore, it may be advisable that the spinner should provide himself with a vessel containing boiling water, and place the same directly under the rock of hemp, from which the spinner forms the thread. The hot water should be renewed as often as required.

The reeling and uniting two or more threads by twisting or hauling.

After a spindle or spool of a spinning wheel is sufficiently filled with thread, the operation of reeling, or bobbing, takes place, *(dévidage.)*

The common reel is used for that purpose, which consists of a wheel with many radii, or arms, provided at the extremities with crutches. The arms are fixed in a hub, which revolves on an axle or crank. This is held between two upright posts. The thread of the spindle, or spool, is fastened to one of the arms of the reel, by holding the thread in a line with the rim of the wheel, and turning the same by the crank. The thread is carried round the rim of the wheel, and gathers itself into a skein, *(echeveau.)*

After the reel shall have had the required quantity or length of thread in the skein, the motion of the wheel is stopped, the thread is cut and parted from the spool, and the end of the thread is then fastened by a knot to the thread of the whole skein.

Where it is required to reel more than one skein or one length of thread together, the counting reel is of great service, and may at once prepare threads for further twisting. The winding on the reel equalizes the length of the thread with accuracy.

The counter prefixed to the reel gives the signal, by striking a small bell, after the wheel has revolved 100 times—*i. e.* after 100 metres of thread in length are wound upon the reel. This quantity of thread is called one skein, *(echeveau ;)* if the reel contains ten skeins, each of 100 metres in length, of course the thread on the reel is 1,000 metres in length.

The number or degree of thickness of the threads is determined by the number of skeins of ½ kilogramme, and is expressed thus: thread No. 24—by that is understood that it requires 24 skeins of thread, or a length of 24,000 metres, and to contain ½ kilogramme.

Therefore, No. 30, 36, 40, &c., expresses that it requires 30, 36, 40, &c., skeins, or 30,000, 36,000, 40,000 metres, of the weight of ½ kilogramme. It is obvious that the higher the number of threads required, the more it must increase in fineness, so that as many more be of the same weight.

This method has this great convenience: that, by weighing the skein, the number of threads may be known. And, to find this, divide 500 with the number that the skein would weigh in grammes; the product gives the number of threads—*i. e.* the number of the skein, and required metre, containing 500 grammes, or ½ kilogramme. Supposing a twist of thread weighs 12½ grammes, this would show to be the thread of No. 40, because it want 40 skeins of thread to make up ½ kilogramme in weight.

In weighing the skeins, no great accuracy is generally practised. The number of threads that are imported into France is determined at the custom house.

Threads not reeled are usually sold by the spinners; but such thread does not possess the required strength to be used by the loom, and it is necessary to bring such threads once more on the regulating spinning wheel, where they are slightly twisted and tangled.

In the common way, the threads are twisted and doubled by the hands of the peasants; but, in extensive linen establishments and fabrics, a machine is required (or mill, as it is called) for that purpose. The machine is so arranged that doubled threads may be twisted, but in the contrary direction.

The manner by which two threads are twisted together by *hand* is too commonly known to make any remarks as to its operation.

On a rotary spinning wheel of any description, two threads may be twisted together also; the operation differs but little from the common mode of spinning, and the threads are equally smoothed by water or saliva, and reeled in the usual manner. By this operation it is only necessary, at the beginning, that the ends of the two threads should be united and fastened to the axle of the spool; then, holding both threads in the left hand, and, with the right give the wheel a contrary motion; the speed of the spool, or spindle, will determine the degree of twist for the thread. The twist may be increased, or diminished, by changing the pulley at the spindle and spool to a larger or smaller diameter.

Spinning hemp by machinery.

The great question (the spinning of flax by machinery) was solved about fifteen years ago. For this valuable invention the world is indebted to Mr. Sherar, a French machinist; but no less to the perseverance of the English Marshall, who erected the first spinning machine for flax in Leeds.

Notwithstanding the great similarity between flax and hemp, the spinning machine, which was used long since to great advantage for the one, could not be applied to the other. The fibres of hemp, being long and coarse, are not so easy to spin, and require more work and preparation. Experiments performed in England, to spin hemp by machinery, did not answer the expectation. The product obtained was very inferior; the threads were composed of torn fibres; the result was this—that it required a machine of a different construction from that for spinning flax.

The first spinning machine for hemp was recently constructed in Paris, at the machine manufactory of M. Dekoster & Co. The construction of said machine is very similar to that used for spinning flax, with this difference: that all the parts are made much larger and stronger in proportion, particularly such parts as prepare the fibres of the hemp.

Similar spinning machines for hemp are now introduced to great advantage in many manufactories in France—not to forget the great hemp spinning manufactory at Alençon of 4,000 spools. This fabric produces threads up to No. 30, (English;) and this thread deserves a general recommendation. In that department, the weaving trade is so increased, that the main occupation is to manufacture sail cloth and linen; but the spinning of threads higher than No. 30 has not yet been successfully tried.

The great obstacle to the progress of spinning hemp by machinery consists principally in the arrangement of the mechanical preparations of the hemp for that purpose; but these difficulties are all now happily removed.

To soften hemp so as to make it fit for spinning, the vertical revolving stamps, before described, are the best that can be recommended; and, with this machine, 600 kilogrammes of hemp may be prepared in one day's work.

The heckling machine, mentioned before, produces the desired effect for hemp.

Finally, M. Dekoster's much celebrated and useful machine to shorten the fibres of hemp for spinning: The machine does not cut the fibres, but it tears the hemp; so that thus the fibres may be easily connected, or spliced, in spinning. One of these machines will prepare 600 kilogrammes of hemp in one day, and requires only one boy for attendance. We are indebted to France for the progress in the hemp-spinning manufacture; but, in truth, this deserves much the united attention of our industrious countrymen.

In relation to political economy, the introduction of the spinning machine for hemp in Russia may be found very advantageous by considering the arguments in foreign countries. They say: "If the vast number of peasants, who are now in the habit of spinning hemp by hand, and by that gain their support, would, instead, attend to the cultivation of their fields, and leave the spinning operation to manufacturing establishments, they would undoubtedly, in doing so, acquire considerably better living for their families, and have less inducements to indulge in corruption."

To meet objections of said operatives was a very common fate, which always lurks in ambush when real justice is to be recognised; but even then and there they must give way to the all-powerful competitor, the hemp and flax spinning machine. By preparing the flax and hemp with greater facility and perfection, being cheaper in its preparation, and consequently opening a wider field for the sale of the raw material, whereby the revenue of the farmer is increased, such was the case in England, Belgium, and France; so that the manufacture of threads spun by hand must give way, by and by, to the powerful spinning machine. But these happy changes have met every where their difficulties.

In Russia, considering many reasons, it appears that there would be as little difficulty in the execution of plans, as there has been in other countries; and less, for the hemp machine is already introduced with success abroad. To spin hemp by machinery, (instead of spinning the same, as usual, by hand, now practised in our country from the hamlet to the estate of the lord, where other pursuits of gain may be followed, and, if so, the demand for raw material would increase,) the time that is *now* consumed in spinning could be applied to clean and work the hemp to greater perfection.

It should be remarked here, that hemp spun by the peasant is scarcely fit for the coarsest kind of linen or ticks (*lecentel*) as required for common home use. They do not possess all the required quality of threads, to weave ticks and linen of good appearance, or durable sail cloth. This is the simple reason why the manufacturing threads of hemp by the spinning machine should be introduced into Russia; because, to produce common coarse linen, there will be time enough left to the peasants to busy themselves in the long winter nights at their common fireside.

Should the introduction of the hemp-spinning machine be founded on shares, then it might be possible that a farmer with a small amount of money could partake of the benefit thereof, if he could not otherwise; and the benefit would be extended to mechanics also, in keeping the said machine in order. For part of it would be fabricated at home, instead of being transported to England, to enrich the manufacturers there; they have finely opened an important era for foreign trade in threads of hemp, which, before the introduction of the spinning machine, could not be compared with foreign goods.

Threads spun by the machine appear to be much improved; they are always equal, smooth, and more compact than those spun by hand; they have no knots or knobs. The twist and tightness is precisely as it is required, and the threads do not tear or tangle as easily in weaving as the threads spun by hand.

The durability of the threads in linen is much stronger than the thread spun by hand, where the fibres of the hemp are extended too long in spinning, which is not the case in spinning with M. Dekoster's machine.

From the tow, a very good article of thread is obtained by the above-named machine, for strong weavings, which it is impossible to obtain by spinning tow of hemp by hand.

Another great preference for the hemp-spinning machine is its cheapness.

But notwithstanding all these preferable arrangements, the condition of a good progress in the enterprise includes sufficient capital, as well as skill and ability to construct and to keep the said machine in good order for constant use.

Capital in Russia is not sufficient, nor that spirit of industry and resolution required; but there is no doubt that, if a company should be formed on stocks or shares, to have the benefit of all gain, then the desired capital would be soon found. Surely capital would be employed to great advantage in an enterprise of the kind in England, where money may be obtained for industrious purposes from 3 to 2½ per cent.; but in Russia, a higher price of money would soon be remunerated, in comparison with the low price of work.

The hemp-spinning machine, owing to its arrangement, is not yet constructed in Russia. Some few experiments have been recently made to spin flax on a spinning machine. The machine was imported from England, at very great expense—of which the greatest part was swallowed up by the enormous duties imposed for the export of said machine. In England, the export of the above-named machine is expressly prohibited by law. But, at present, the difficulty to obtain a machine of this kind is done away with. The celebrated machine of M. Dekoster, for spinning hemp, may be exported from France free of all duties or premiums, and the price of the machine itself is not higher than a similar one manufactured in England. The perfection of M. Dekoster's machine is guaranteed by certificates of all the principal manufacturers in France, where the said machine is in operation to great satisfaction; and certificates are also produced from England, where they recently purchased several improvements in the flax-spinning machine of M. Dekoster's invention.

For the first time the said machine is put in operation, skilful and experienced workmen should be engaged. In future, there is not the least doubt but that such a demand for any number of workmen may be procured by apprentices. In St. Petersburg, the Technological Institute is a blessing to fabricants, for, by the aid of such wise arrangements, they may at any time prepare and secure good workmen to erect and repair, as well as to work the said spinning machine.

To obtain the raw material which would be required for said manufactory, there is no country better situated or provided, nor any where more hemp exported with less expense, than Russia.

The hemp-spinning machine may be set in motion by water power, and there is no doubt but that it may be erected anywhere, wherever an opportunity is offered; but, in other cases, steam power would remove all difficulties as to location. The fuel which is required would be a question of importance, but not applicable in Russia. Great quantities of stone or pit coal are brought as ballast from Newcastle, (England,) and sell very cheap; and stone coal from France and Belgium. Without this, in many parts of Russia, there have been discovered extensive coal mines, which may be worked at any time. But we have not mentioned the extensive forests which abound in the country, that could supply it for time incalculable.

To the above-mentioned useful improvements should be added some branches of improvements of home industry. The excellence of the Technological Institute has been already mentioned. There are exhibited threads spun by a hand-spinning machine; and, at the same time they offer for sale any number of said machines.

This should attract the attention of weavers, to embrace the opportunity without loss of time, and introduce the same, at least in the most distinguished weaving villages. One such a machine would, in one day, provide thread sufficient to keep a loom at work for one month.

The demonstrations made in Paris in favor of the progress and operation of the spinning machine for hemp have not yet done away the custom of spinning hemp by hand; it is still to be met with in villages and hamlets. The peasants are slow to employ themselves in a more profitable branch of industry. It is equally to be wished that encouragement would be held out in Russia to improve the hemp spinning business by the said spinning machine of M. Dekoster, and not to remain in reserve to all advantages of the hemp culture over other countries.

We shall conclude the spinning business of hemp with an account of the particular arrangement of said spinning machine.

Notice for noblemen, fabricants, merchants, and others, who should be inclined to unite and undertake the business, by investing a small capital, calculated accordingly, for an establishment of a spinning manufactory of 4,256 spindles. The price is here set down as the spinning machine is sold at M. Dekoster & Co.'s machine shop in Paris.

Estimate of a spinning machine for hemp of 36 *frames, or* 4,256 *spindles—to spin long fibres of hemp as well as tow.*

Names of the different machines.	Prices each.	Prices total.
	Francs.	Francs.
The machine to prepare the hemp.		
2 brakes, as above described	5,000	10,000
2 cutting machines	750	1,500
7 heckling machines	3,250	22,750
A machine to prepare long fibres.		
3 fibre tables (1st étirage)	2,800	8,400
6 fibre tables (2d étirage)	1,500	9,000
9 fibre tables (3d étirage)	1,400	12,600
80 spools or bobbins for the frame of the reel (*banc à broches*)	375	30,000
The machines to prepare tow.		
2 beating cards	3,300	6,600
1 double card	500	500
4 refining cards	3,300	13,200
15 fibre frames (1 et 2 étirage)	1,300	19,500

ESTIMATE—Continued.

Names of the different machines.	Prices each.	Prices total.
The spinning frames for long fibres.	Francs.	Francs.
15 frames No. 3, of 120 spindles, for threads of from No. 16 to 30—in all, 1,800 spindles	42	60,480
15 frames No. 4, of 120 spindles, for threads of from No. 16 to 30—in all, 1,800 spindles	42	60,480
The spinning frames for tow.		
4 frames No. 7, of 112 spindles, for threads of from No. 8 to 16—in all, 448 spindles	44	19,712
2 frames No. 8, of 104 spindles, for threads of from No. 4 to 10—in all, 208 spools	45	9,360
In all, 4,256 spindles	–	354,560
6 garnitures for carding	2,600	15,600
12 double reels	450	5,400
1 machine for dressing the fibres, out of box wood	1,200	1,200
		376,760

Divers appurtenances.

Sheet-iron vessels, spindles, hand combs, lines for the spindles, leather straps, a stop machine, &c.

The erection of the machine, including the workmen who accompany the machine for that purpose—altogether 45,000 francs.

The transportation of said machine, which weighs 125,000 kilogrammes, (15 tons,)—further, (1) main shaft; (2) the first moves in a rotary motion; (3) a steam engine, or a hydraulic wheel.

The four last items cannot be valued, because the arrangement of the machine depends on the location; but is merely mentioned to give a complete statement.

A complete machine is sold at the establishment of M. Dekoster & Co., in Paris, for 421,760 francs, (about $84,352.)

Remarks.—1. The building for said spinning machine should be 96 metres (48 fathoms) long, and 7 fathoms broad—2 stories high. The machine to be erected in the lower story; in the upper, the reeling and other light machinery.

2. The main shaft and first movers may be calculated at 25,000 francs.

3. If necessity should require to use steam power, then the steam engine must be of no less than 45-horse power, because one-horse power is calculated for every 100 spindles; therefore, for this, 40-horse power would be sufficient, but it is advisable to have more rather than less power.

A steam engine of 45-horse power is sold in Paris for from 40,000 to 45,000 francs, ($9,000.)

The attendance, when the machine is in full operation, requires 210 workmen to 4,256 spindles, in different classes of employment.

The frames Nos. 3 and 4 are arranged for hot water, and on the same may be spun hemp of long fibres, or tow. The frame No. 4 is known from No. 3 by being on longer posts, so that the cylinders may be better supplied. The frames Nos. 7 and 8 are arranged for cold water, or dry threads. It is calculated that each frame, by the above-described arrangement, produces—as from No. (English) spun from long fibres, as well as out of tow:

Frame No. 3, 120 *spindles.*—No. 16—34 kilogrammes; No. 18—31 kil., No. 20—27½ kil.; No. 22—25 kil.; No. 25—22½ kil.; No. 28—20 kil.; No. 30—18 kil.

Frame No. 4, 120 *spindles.*—The same as above.

Frame No. 7, 120 *spindles.*—No. 8—66 kilogrammes; No. 10—56 kil.; No. 12—46 kil.; No. 14—39 kil.; No. 16—34 kil.

Frame, No. 8, 104 *spindles.*—No. 4—120 kilogrammes; No. 5—100 kil.; No. 6—90 kil.; No. 7—75 kil.; No. 8—66 kil.; No. 10—56 kil.

The numbers are here determined which each frame is to produce; if any change should be undertaken, so as to alter the same otherwise than the capacity of the frame permits, threads of very inferior quality will be the consequence.

According to the before-stated estimate, it is supposed that all 36 frames, or 4,256 spindles, should be at work, and in taking the average of a day's work of each frame; consequently, all frames together would produce as follow:

	Kil.
30 *frames.*—Nos. 3 and 4—threads No. 20 to 27½ kilogrammes for each frame, make in one day's work - - - -	825
6 *frames.*—Nos. 7 and 8—threads No. 10 to 50 kilogrammes for each frame, make in one day's work - - . -	336
In all, for 36 frames, in one day's work, threads - - -	1,161
This quantity is calculated 20 per cent. expense for softening, heckling, and spinning of the raw material—in all - - -	252
Which makes the required - - - - -	1,413

or about 3,400 pounds of hemp of good quality. The before-calculated 20 per cent. on the raw material is sometimes more or less, depending on the quality of the hemp used in the fabrication. According to the above account, there are produced, in one day's work, 1,161 kilogrammes (or 2,800 pounds) of thread. On the frames Nos. 3 and 4 may be spun threads of long-fibred hemp, as before mentioned.

Compare the above fixed percentage of expenses of the required capital, and then distribute the production of the spinning machine throughout the whole year; there will exist no difficulty to convince or comprehend that this fabrication may be carried on to satisfaction and great advantage.

SEVENTH DIVISION.

The weaving of hemp.

The weaving of hemp may be divided into two distinct divisions—the weaving of cloths and other necessaries for home consumption; and the weaving for naval purposes. The two modes of weaving distinguish themselves one from another, not only in the fabrication, but in the selection of the hemp.

The weaving of sail cloth and course linen.

The loom for weaving is generally known, and is worked by hand, or some mechanical arrangement. The improvements in weaving are of importance.

But the principal part depends on the skill of the weaver in arranging the composition of the ground, or warp, which is extended across the beam. The selection of the threads for that purpose has great influence on the quality of the weaving; the warp should therefore be, as much as possible, equally tight and smooth. The thread must be formed from the 1st degree of fibres.

After the warp is composed, it should be smoothed over with some suitable substance, prepared for that purpose, to make the threads sleek and smooth, so that the strata of the threads may lie lightly one on the other, and be easily parted by passing the combs through the threads; after all, to give it the required elasticity to sustain a strain.

If dampness is introduced to the thread before the smoothing, the work is more facilitated. And, for this reason, the threads are usually placed near the ground, where the air is more or less damp. But this dampness is injurious to the health of the workmen. Several remedies have been proposed, of different kinds; among others is found that proposed by M. Moreno, of Paris, that Spanish meal may be applied with advantage, instead of the dampness.

The composition is as follows: Take 4 kilogrammes of Spanish meal, boil it half an hour in 24 centilitres of water, then strain the decoction through a tight cloth. After the fluid has cooled, it has the appearance of jelly. A second receipt is: Boil one pound of barley or rice meal, which, when used warm, answers the same purpose. Others mix a decoction of Iceland moss, to improve it; but the consequence is the same. If too much meal is used, it changes the hygromatic property; *i. e.*, it does not imbibe moisture from the air.

The said compositions have a peculiar odor, much disliked by the workmen. To correct this unpleasant property, they have, in Germany, substituted the following: To one pound of Iceland moss add one ounce of good potash, and put it together in a stone-ware pot; then pour water upon the mixture, and stir the same from time to time with a wooden pestle; after 24 or 30 hours' maceration, it is put on a sieve; the fluid that drains off is dark and bitter; then the moss in the sieve is kneaded and pressed; water is poured over until the water appears colorless and tasteless.

The fluid obtained in this manner is boiled until it becomes consistent, like jelly, possessing all the required quality for smoothing the warp; what is left may be drained in a sieve, and used at any time by dissolving it.

Yet, in France, is the pernicious custom of putting the weavings in a dark and damp cellar for a considerable length of time; and they use, for smoothing the linen, a decoction composed of pieces of leather mixed with meal.

The thread for the woof is wound upon small hollow reeds, which are put loosely in the shuttle, from which it is distributed between the warp. The threads of the woof may be of a less degree of strength than those of the warp. They may be composed of second-rate fibres, or even of tow. spun on the spinning machine, except when sail cloth of the first quality is required: then the warp and woof of the threads should be of the strongest possible sort.

In Anjou the sail cloth is woven from nine-fold yarn, according to the fineness of the threads—particularly the broad weaving of 21 inches, which requires either bleached or unbleached threads.

Sail cloth for merchant ships is usually manufactured from unbleached threads. The bleaching of thread adds to the durability of the sail cloth, as it is perfectly free from the resinous matter of the hemp, and is not apt to break, as is the case with the other.

The whole fleet in France has the warp and woof of bleached threads.

There has not yet been erected, in France, a private establishment for weaving by machinery, except that of M. Dekoster & Co., which we have before mentioned.

To complete the above estimate of an establishment for spinning hemp by the machine, we hereby annex the items of a mechanical loom calculated for 2,800 lbs. of thread, &c.

8 machines to contain the warps, at 800 francs each -	- Frs. 6,400
7 machines for smoothing, at 2,500 francs each - -	- 17,500
130 looms, at 600 francs each - - - - -	- 78,000
Total - - - -	Frs. 101,900

All work in weaving is performed and accomplished by the machine, perfect and complete, independent of the assistance of the workmen.

The weaving of linen for home use, and dresses for servants.

The weaving of hemp for the dresses of servants requires many considerations to ensure the desired object. It is very desirable that the industry of the native production (which, until now, has only had the manufacture of sail cloth of hemp in view) should turn its attention to the other branch of manufacture; and, in fact, in many parts of Russia it is still unknown that from hemp can be produced linen, where prejudice prevails; that from flax only, but never from hemp, could ever threads be spun which would be of the required quality for weaving.

If the fabrication should be extended to the above-mentioned second branch of manufacturing hemp, it would require, first, to be heckled, as above described; 2d, the process of cleaning the seed, and the sowing. For fine linen, the seed should be ordered from Bologna, where the hemp for that purpose is most fit.

In Dauphiné every kind of linen is fabricated from hemp; and in the vicinity of Verona there are, annually, at least 20,000 pieces of linen (each from 80 to 90 metres) manufactured. The average price is about 200 francs, which makes 4,000,000 francs. Exclusive of this, there is much table cloth woven, which is celebrated for its beauty and durability.

The natives in that country, having no use for linen, transport the same in great quantities to the interior of France, and from thence to the fair of Burgos, in Spain, which is held from July 21st to the 1st of August.

This linen is divided into four different classes, according to its width, and is called *deux tiers*, (or ⅔ ounce,) and is the most narrow; and is used, without exception as white table cloth. Then follows *sept-huit*, (or ⅞ ounce,) and weaved from unbleached threads; a low number used for sailors' dress, to make jackets, breeches, &c. The widest sort is *quatre-quarts* and *cinq-quarts*, (or 4 quarters and 5 quarters each;) they serve for bed sheets. The linen of ⅔ and 4 quarters is always fabricated from bleached threads.

Verona has no very large manufactories for linen made of hemp or flax; yet the peasants in the vicinity mostly cultivate their lands, and also weave linen. The inhabitants of the town purchase threads, and give it to be woven by the country females; and, as soon as a piece of linen is finished, it is brought to market, which is held on a fixed day in the week, and sold to a linen broker, who is very improperly called a manufacturer of the article, and by him it is brought in trade.

The linen of Verona is known throughout all France; and the broker from the town knows how to keep up the fame of that celebrated linen. All the goods of linen made of hemp or flax, or the material intended for transportation, or export, are packed up—*i. e.*, each piece must be brought for inspection before the commercial committee, who testify that the linen is of hemp. It is then stamped by a particular stamp, with these words: *Toile de Verone—tout chanvre.*

The linen of hemp from threads Nos. 35 and 40 is very little different in its appearance from the linen made of flax. The table cloths are woven on the machine loom of M. Sherar. The magnificent whiteness is incomparable; and the art of perfect bleaching appears to be a hereditary gift from generation to generation.

Bleaching of the linen made of hemp.

The fibres of hemp, after they have been washed, still contain a substance by which it is penetrated, which imparts to the linen a greasy-gray appearance. The said substance impairs the elasticity, decreases its strength, and covers the property of its whiteness. To remedy these defects, the linen must undergo the bleaching process. The operation is performed before weaving the threads, or after weaving the linen. Here we remark the process of the last, as the most important.

In Holland the bleaching of linen is brought to the utmost perfection—particularly of flax linen; but the bleached sail cloth also possesses in its appearance all the required property, and the degree of perfect bleaching determines the value of sail cloth, not only in quality, but also in price.

In France they used, at first, chlorine for the purpose of bleaching sail cloth and coarse linen made of hemp; but it was soon discovered that, in possessing the property to shorten the bleaching process, it had a very injurious effect upon the quality of the linen. At present, they have adopted the mode of bleaching practised in Holland—using ley, and then spread the linen out upon the turf, and then sprinkle the same from time to time.

It is well known that, before bleaching, the linen undergoes a previous preparation; of which we make the following remarks:

1. Such pieces of linen as are to be bleached at the same time should be carefully selected; it is necesssry that they should be of the same color, because they should all bleach equally.

2. The linen should be carefully cleared of all foreign matters which

have been used in the operation of spinning as well as weaving—particularly that matter applied to the linen for smoothing, as above mentioned, done in different ways. After the pieces of linen are selected of equal color, they are spread, in strata, in a tank or reservoir, and several buckets of river water are added among the linen. But if it be found that the linen contains some of the before-mentioned smoothing substance, then some bran or rye meal is mixed with it, which will cause the mixture to ferment; after this, the tank is covered, and a weight added upon the linen, to keep all parts perfectly immersed at the time of fermentation, which commences in a few hours, and then the fluid rises in consequence of a higher temperature. The fermentation shows itself by numerous gas bubbles rising to the surface; after the fermentation has finished, the fluid settles down, and the air bubbles discontinue to be disengaged; at this moment the linen must be removed from the tank, and washed in clean river water: the fermentation will be completed in 24, 30, or 36 hours, according to the strength of the fermentation and the fineness of the linen. Particular attention should be given to the observation as to the proper time when the fermentation is completed, for the linen must be removed at once; the least neglect, by leaving the linen longer in the fluid, (from the decomposition process which commences,) may destroy or injure the linen.

3. After the linen has been removed, it should be washed, so as to separate all dirty substances from it. Some manufacturers use wooden cylinders where the linen passes through. Others, again, employ presses, which are brought together by cog wheels, under the surface of the warm water, which carries off the dissolved foreign matter.

Many recommend the washing machine (dash wheel) used in England for that purpose. When this machine is well attended to, in a quarter of an hour 8 pieces of linen can be washed. After the linen is completely cleansed from all the said matter and other dirt, the bleaching process begins, and is carried on in France in the following manner:

1. A good ley is made, the quality of which should be to dissolve the matter that colors the linen, and should not communicate any other color to the same. For that purpose the ley is made of such material as prevents the decomposition of the ley. Different kinds of wood serve for that purpose.

2. The linen is sorted according to its fineness, and, according to the temperature of the air and weather, undergoes an immersion of 8 or 9 times in the ley. After every immersion, the linen is washed as above described, and then spread on turf for 4 or 5 days, according to the weather. Linen that has not yet been immersed in ley should never be exposed to the rays of the sun, or it will soon be corrupt. Moreover, the linen should not be brought very wet from the water, which is retained by it, before the immersion in the ley. This would prevent the penetrating of the pores of the linen by the ley. But the linen should not be too dry; in that case, it would not take the ley.

The temperature of the ley must be increased before the immersion takes place.

3. For the above-mentioned operation, (the immersion of linen in ley,) large tanks are required, with double bottoms; in the centre is arranged a cylinder of lead, brass, or wood; the upper cylinder projecting a little over the level of the tank; a tube twice penetrates the lower bottom, for the admission of steam from a boiler near by.

The linen is spread between the cylinders, and wound into the inside of the tank in a sufficiently dry state. Then the steam is let into the double-bottomed tank, which soon heats the ley that surrounds the cylinder; the most heated particles rise to the surface, according to their gravity; the fluid increases in both, and, moving in the direction of the cylinders where the linen is spread, penetrates the linen twice in cooling, and returns to the boiler, from which constantly a new supply of steam is obtained, and kept in constant circulation.

4. The gradual cooling and heating of the linen should be executed with the greatest precaution, or the color of the linen may become permanent. The linen should never remain dry after once being heated.

5. The place selected to spread the linen out on the turf requires some arrangement. Such a piece of ground is surrounded by an enclosure, and divided off by ditches, in parallel directions, from fifteen to twenty metres apart. The water kept in these ditches, for moistening the linen, should be as pure and clean as possible. The water is splashed all over the spread linen by large spoons or shovels. The strictest cleanliness should be observed in this process.

6. To facilitate the bleaching after five or six immersions in the ley, the linen is put for twelve hours in diluted sulphuric acid in a great quantity of water. After this, it is once more put into the ley, and then immersed for twelve hours in chlorine. When the linen is removed from this, it is washed and boiled in weak ley, then washed again, and spread on the turf.

After this, it is once more immersed in diluted sulphuric acid; and at last, after this immersion, the linen is washed with soap. All these operations can only be executed by skilful and practical workmen. There is still more attention required in the bleaching of threads.

The last finishing.—After the linen has been washed with soap, the finish is given—one of the most important preparations to fine flax linen; but it it is useless in sail cloth and other coarse linen. Fine linen of hemp, such as is brought to Dôfée for sale, is usually prepared with starch, which is dissolved in water and then used. Each finisher makes some addition of different substances, to suit his fancy.

After the last finish is put on, the linen is carried to the dry house, where it is extended in all its length. This should be done as soon as possible.

After complete drying, it is carried to the folding machine; but this is only done with fine linen. To do the like with sail cloth or coarse linen would be useless. But many manufacturers have the custom to do so, to cover their bad linen under an elegant outside.

The coarse linen is spread out on stakes so fixed that the space between them should be as little as possible.

The bleaching of threads is precisely the same as that of linen, with but few exceptions, which are easily comprehended. Many manufacturers prefer weaving in linen of bleached threads, for it produces better results.

In conclusion, we should remember the arrangements in the province of Jaroslov, on the estate of the nobleman K. Obrescov, who has an extensive bleaching establishment in great perfection. To this establishment apprentices are admitted, to be instructed in all branches of bleaching linen of hemp. In the city of Kaselske, in the province of Kaluga, the manufacturing establishment of Brusgina is in successful operation in bleaching linen and thread of hemp. These branches of industry should take root in other parts of Russia.

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